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The Journal of TEACHER EDUCATION

The Continuing Crisis

A Symposium on: THE LEARNED SOCIETIES AND THE CRISIS IN TEACHER SUPPLY AND PREPARATION

with articles by

FRANCIS KEPPEL — SIDNEY PAINTER
JOHN COLEMAN — WILLIAM PARKER
JOHN MAYOR — BOYD SHAFER
J. F. WELLEMEYER, JR.

Special Feature: THE 1956 TEACHER SUPPLY AND DEMAND REPORT

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PRE

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EDITORIAL

New Format. With the advent of spring, we call attention to the new ensemble in which the *Journal* is bedecked. The unveiling of a new format is a gala occasion for any publication. The March *Journal* sallies forth (with thanks for valuable assistance to Ken Frye of the NEA Art Department) as a young lady garbed in new spring finery while proud parents look expectantly for signs of approval from the onlookers. The editors hope for approbation from our readers.

Expansion Planned. This is only one of the steps contemplated to make the *Journal* worthy of its important field and its distinguished clientele. Already in effective operation is an Editorial Advisory Board of superbly competent people, representing the major areas of content in teacher education. Increasingly the Board will assume responsibiiity for planning the respective issues and evaluating the coverage of the field. Just around the corner is an enlargement of each volume to provide inclusion of articles from every significant area of teacher education. Both the rapidly increasing subscription list and the ferment of change in the field testify to the need for a bigger and better national journal.

The Improving Teacher Supply Situation. Finally, the editors proudly point to the contents of this issue. As has been the case since 1952, the annual national study of teacher supply and demand is included in the March issue. The 1956 study is the ninth in the series of annual national studies which NCTEPS inaugurated in 1948. Since 1952, the study has been conducted by the NEA Research Division in cooperation with the Commission.

We take special pride in the 1956 study, since it tends to confirm the optimism of the Commission—set forth in its 1955 annual report to the profession under the title of *The Crucial Years*—that we are on our way out of the darkness of the critical shortage of teachers. The Commission report, based upon spot-check evidence from every state, written far in advance of the 1956 study, said flatly that a better day for teacher supply is on the way; that by 1961-62 it would be possible to get from the colleges and universities the 125,000 new teachers needed to supply the two irreducible needs of the schools—the need for replacement of those leaving the profession each year and the need to staff new positions. A production of 106,000 new teachers this year as contrasted with 87,000 a year ago is significant. Moreover, the increase in teacher education enrollments continues to outstrip that of general college enrollments. The reserve of former teachers and general college graduates of other years electing to prepare for teaching continues each year to hold the deficit down. The total number of emergency certificates issued each year has started downward. College enrollments continue to increase beyond the most optimistic forecasts.

We are on our way. If economic gains of teachers can be kept abreast of competing fields, if standards for the profession continue to be raised, nothing short of a great national upheaval can stop the trend.

—T. M. S.

A Symposium

The Learned Societies and the Crisis in Teacher Supply and Preparation

by

FRANCIS KEPPELL, Council on Cooperation in Teacher Education

JOHN S. COLEMAN, National Research Council

JOHN R. MAYOR, American Association for the Advancement of Science

SIDNEY PAINTER—American Historical Association

WILLIAM R. PARKER, Modern Language Association of America

BOYD C. SHAFER, American Historical Association

J. F. WELLEMEYER, JR., American Council of Learned Societies

Introduction

The March issue of the *Journal of Teacher Education,* each year since 1952, has carried the full report of the annual national study of teacher supply and demand. In each of these March issues, a series of articles related in a special way to the teacher supply-demand situation has been included. The several articles in the following symposium are deemed especially appropriate to the subject of this issue.

The articles were abstracted from addresses delivered before the 1955 annual meeting of the Council on Cooperation in Teacher Education—with the exception of a brief statement by Boyd C. Shafer—a meeting devoted to consideration of the continuing nature of teacher shortages and to the need for strengthening teacher education with especial emphasis upon an exchange of viewpoints about these problems with the representatives of several of the learned societies. This meeting was one of several significant steps which the CCTE is undertaking to bring about a focus of efforts by those primarily engaged in teacher education and by representatives of the scholarly disciplines. The papers contained in the symposium present the concern of the several societies regarding the quality of teaching services in the respective fields, the persisting shortages of competent teachers for those fields, and the plans of the societies to help solve the teacher shortage and to strengthen teacher preparation.

The paper by Dean Keppel undertakes to define the nature of the problem of securing a desirable concert of effort of the scholarly groups and of those concerned directly with the processes of teacher education. J. F. Wellemeyer, Jr., in his presentation, selects some of the constituent societies of the American Council of Learned Societies and briefly describes the activities relating to American education in which they are engaged. This effort to seek common ground—by the so-called educationists and the so-called intellectuals will be welcomed by all groups concerned with the improvement of education. It is fair to say that the scholarly groups have been too far removed from exercising real responsibility regarding both the supply of teachers and the preparation of teachers.

The reasons for this relative isolation have been stated in many ways, often intemperately, and often with great imagination and little fact. Whether this has resulted from a studied aloofness, fancied rebuffs, or deliberate default of one group or the other is beside the point. The fact remains that there has been a serious lack of communication and of cooperation between them. Each has vital and appropriate roles to play in the proper education of teachers for our schools. The first step is for the two groups to understand each other, to know the motivations and philosophies of each, to know what is now being planned by each, as preludes to developing cooperative attacks on the problems. Only with such understanding can serious skewing of educational practices be averted.

The *Journal of Teacher Education* is pleased to present these papers, as representing the viewpoints of representatives of several of the important disciplines for the information of its readers. It is hoped that by so doing an important contribution may be made to the establishment and maintenance of effective channels of communication among those who have deep concern for this problem.

The Search for Common Ground

FRANCIS KEPPEL
Dean, Graduate School of Education
Harvard University, Cambridge, Massachusetts

NO FORMULA is available for the proper balance and mixture of the forces which should influence educational policy. What seems appropriate today may seem unwise tomorrow. The schools are so closely linked with society that development in one area will affect other areas. The requirements of national defense may call for rapid preparation in some specialties, while at another time the reduction of working hours may call for a more leisurely teaching of cultural subjects. The problem here is not what the precise policy shall be, but rather how decision on that policy should be reached.

Factors Affecting Policy Formation

The factors we have to consider might be grouped into five categories: the children and their parents, the nature of what is to be taught, the community in which the children live, the needs of enterprises and groups of all sorts, and the national interest. A case can be made that neither the national interest nor the needs of the subjects to be taught are now adequately weighed in the balance. The interests of parents and children, of the community, and of special interest groups, on the other hand, seem to have an adequate, indeed a governing, voice through the local school board or committee. For the great majority of Americans, who fear the centralization of powers, this guarantee of local responsibility and initiative is a most precious possession—not to be given up any more than the independence of the judiciary should be challenged. The question then resolves itself into asking whether other than local influences or restraints can be brought to bear on school boards without endangering their initiative and responsibilities. The answer is clearly *yes.*

Our experience at all levels of government suggests that co-equal and independent units can combine their efforts if the ground rules are laid down in advance. And our experience with local school boards shows that despite state control over such factors as the certification of personnel, the kinds of buildings, and the like, basic policy is still in local hands.

Checks and Balances

We can then turn to considering the checks and balances that now exist or that might be brought into force. The first is the restraints placed on local educational policy by the provisions of federal and state constitutions. As we have seen in recent years, the courts have had their profoundest influence in the areas of religious teaching, race relations, and freedom of speech. This influence can reasonably be expected to continue without major change. So can the wishes and interests of the children and their parents, as long as mem-

bership on local school boards is the result of some kind of voting process. Nor is there apparent need for making special arrangements beyond those now available for such groups as business enterprise or labor unions to make their views felt. The problem centers on (a) how best to fuse national interests with local responsibility in providing equality of opportunity, in setting standards, and in meeting national personnel requirements, and (b) how best to give proper weight to the views of the scholars in the areas of human knowledge that should be taught.

The former subject is beyond the reach of this article. The problem assigned by the editor is: the relation of the scholar and groups of scholars to the curriculum of the schools.

In Retrospect

Prior to 1900, the wishes of the college teachers had a governing influence over the high school curriculum. Since a substantial group of high school students of that day planned to carry on their education at the college level, such an arrangement was only natural. As the high schools expanded, a smaller percentage of the students were capable of or interested in future education. The curriculum became subject to other, more local influences. Teachers in the schools came to have fewer official and personal connections with their colleagues in the college. College admission requirements were fought by the high schools, and sometimes ignored. Emphasis on vocational education helped to build between the two groups of educators a barrier of social class which many teachers found hard to scale. In time the colleges came to have influence only in the college preparatory aspect of the curriculum, and even this influence tended to weaken as the years went by.

Internal Dissension

These developments did not take place without comment. The history of the National Education Association records a bitter struggle between the school and the college groups which is still reflected in national organizations of educators. The present tendency to identify this struggle as one between the advocate of the "liberal arts" and the proponent of the "professional" education point of view has ended by obscuring a more important issue. The collegiate and university groups, by the very nature of their specialties, are in touch with a wide variety of regional and national interests. Compared to the educator who deals only with the problems of the local primary and secondary schools, college personnel are in a better position to apply influence at the several levels of government and of private enterprise, both through their regular programs and through the influence of their alumni.

By allowing a sharp separation between college and school personnel (and it should be noted here that the teachers colleges and the schools of education are identified as being on the side of the schools and not the colleges) the entire group of educators has permitted division in their own ranks to weaken their total influence. This fact goes a long way toward explaining why educators, despite their great numbers and their geographical coverage, have less voice in public affairs than any group of comparable size with special interests in contemporary society.

The result has been not only the weakening of the internal fibres. It has also forced the colleges to concentrate their interest on only one aspect of the school's curriculum—that which avowedly prepares the students for college admission. In this area scholars in

the colleges have been conducting a holding operation and have felt that they have lost ground year after year. By and large this defensive effort has kept them from taking an active part in influencing the curriculum for the great majority of students who do not plan to go to college. While the interests of school teachers and administrators, and through them of the professors of education, are well represented at the state and local level, the opposite is true of the interests of the specialists in the various fields of human knowledge. Since there is now little formal machinery for them to exercise this influence through established channels—state, national or professional groups—it can be argued that the United States presents the ironic situation of a nation dependent on its scholars and specialists but not allowing them much voice in planning the future of their own field.

This is, of course, an exaggeration, since the professional groups—in law, medicine, and the like — control the university programs to some extent, and through them can help to select and prepare their own successors. But they do not have much opportunity to think in terms of the interrelation of their specialty to the general body of knowledge and skills taught by the public schools. The engineer, for example, has relatively little to say about the nature of the ordinary program of vocational teaching in the high school. The lawyer has little chance to affect the textbook on civics. The professor of literature no longer chooses the prose and poetry used in the general courses in English.

Hopeful Signs

The learned societies have only recently begun to study the situation and to take remedial action. The Modern Language Association, the American Historical Association, the National Research Council, the American Association for the Advancement of Science, and the American Council of Learned Societies all have active committees and are assigning staffs to help create programs to influence what is taught in the schools. Many liberal arts colleges are leaving an earlier isolation to join in the fray. The American Council on Education has a Council on Cooperation in Teacher Education which is trying to help to tie in these activities with the appropriate groups in direct touch with the schools and their teachers.

Ground Rules for Building Understanding

1. The first ground rule is to remember the past. As a professional educator I cannot forget the years of social and cultural snobbery awarded me by some of my academic colleagues. Their pleased ignorance about the reality of school life still annoys me. Memories die hard when you have felt like a typhoid carrier at a nice party. Nor can my academic friends forget that they have been effectively frozen out of influence in the schools. They remember the horrible things that have happened to their speciaties as now taught. There is no use pretending that we can create sweetness and light overnight. What is needed is an effort to imagine oneself into the other man's frame of mind, an effort to speak with decent courtesy and sensitivity.

2. The next ground rule is humility. The scholar's knowledge is complex and detailed. Those of us who are ignorant of the hard fight for scholarly facts, and of the danger of easy generalization in difficult subjects, should not be restless in the face of cautious learning. Nor should we be angry at the de-

mands of the specialist, for he has led the march of man from ignorance. We should only urge in quiet tones that every man cannot be expert in all fields—but neither can he be illiterate. It is our hard task to arrange matters so that learning (in the older, non-psychological sense) can influence the curriculum of the schools. At the same time our learned friends must come to realize that every child is not a future scholar. This is true for several reasons, only one of which is that his IQ is not high enough. There are almost a limitless number of factors—family, quality of teaching, environment, the tone of the school, the state of the nation, to name only a few—which combine to make the task of choosing subjects and of teaching children a matter of the utmost intellectual and moral difficulty. Each side must be aware of the problems of the other and be humble in its ignorance of the difficulties in their solution.

3. A sense of perspective—or humor—will do no harm. Educators of all types have a habit of regarding their own work as crucial and that of other educators as marginal. The idea that the educators are carrying on an emotional civil war must seem comic, if not frustrating, to the sensitive citizen who looks out on a troubled world. There is something to be said for laughing at ourselves before we have to cry.

4. At this stage of the relations between learned groups and the schoolmen, complicated matters of detail should be avoided until the grand pattern of what is needed to be done is worked out. The mechanics can then fall into place. I have in mind the tendency of the scholars to worry about details of state certification requirements, when the real issue is why they exist and what is taught to meet them. I also have in mind the tendency of professional educators to argue about graduate credits in "subject matter fields" (that infelicitous phrase) when the real issue is the overall program and the nature of the courses available for the graduate work of teachers in the schools. These are times for strategic, not tactical, discussions.

5. If the first four ground rules sound like the beatitudes, the fifth will surely qualify with flying colors. It is that the object of all the collaboration is to improve the situation of the particular child. The basis of our society is the free and thinking adult. Schools are designed to help the child achieve that high standing. They are not designed to carry out any professional educator's pet project or any scholar's particular enthusiasm. Help to the individual is the common goal, and every policy should be tested against this hard criterion. If an idea should be good in itself, but should end in harming the overall effect of the school on the growing child, then it must give way or take a new and useful form. In this country, schools are designed for children—not for the convenience of the government or the scholars or the professional educators or even the parents.

And So ——

Given these ground rules and an earnest desire to cooperate, the learned societies and the professional educators can help the children and help each other. A hopeful start has been made. As my young daughter rather bluntly put it on another matter the other day: "Don't go lousing it up now, Daddy."

> "To what class does the world owe deeper gratitude than to those whose tireless energy drives away the evils of ignorance and calls forth the blossoming and fruitfulness of countless minds?"
>
> *Helen Keller*

The National Academy of Sciences — National Research Council

JOHN COLEMAN
Executive Secretary, Division of Physical Sciences
National Research Council, Washington, D. C.

THE preparation of tomorrow's scholars is a responsible heritage of each generation in which today's leaders have a particular and personal responsibility. In science, where what is to be learned depends so uniquely on what has been learned; where new understanding must be based solidly on comprehension of the ideas, data, and the tools and techniques comprising the rapidly expanding structure of modern science and technology; the processes of transmitting essential knowledge to our successors have always been of concern to learned groups and societies.

The National Academy of Sciences-National Research Council has for many years devoted much of its thought, time, and effort to education in science, particularly at the graduate and post-doctoral levels. Having a membership selected for eminence in research in the physical and life sciences, the NAS-NRC has understandably been most active in encouraging and supporting those whose abilities and interests lie in exploring and extending the frontiers of present knowledge. Through the more than one hundred cooperating scientific and technical societies and in close relationship with such organizations as the American Association for the Advancement of Science, National Science Foundation, American Council of Learned Societies, Social Science Research Council, and the American Council on Education, the NAS-NRC has also been able to make effective contribution to many other aspects of education in science and technology.

Increasing Demand Incites Criticism

In recent years, the ever-swelling demand for qualified scientists, engineers, and technicians, particularly on the part of government and industry, the burgeoning complexity and scope of many areas of scientific inquiry and application, and the economic and social evolutions in our growing population have augmented old problems and created new ones for educators and scientists alike. In the frustration of trying simultaneously to meet current and future personnel needs, both the quantity and quality of today's graduates are often criticized as inadequate. And —with increasing tempo—new statistics, opinions, and predictions appear to support or deny these criticisms. While many of the statements which have been made are of alarmist nature and too many of the statistics offered unhappily leave valid questions unanswered, there nevertheless is widespread agreement that there is a problem of major dimensions and something must be done. When details of just what should be done are considered, however, agreement often evaporates.

Results of Conference

About a year ago, the NAS-NRC Division of Physical Sciences, joined by

the American Institute of Physics, sponsored a Conference on the Production of Physicists to examine in detail and select specific courses of action to improve the quality and output of new physicists which might be followed by the several groups represented. While the recommendations of this body have been reported elsewhere in detail, several of the conclusions reached may be of interest:[1]

First, the conference agreed that the critical area for immediate attention is in the secondary schools where the student receives motivation and his first tools for a career in science or technology. Lacking these, the high school graduate, whatever his other qualifications and aptitudes, is generally lost to these professions.

Second, it was agreed that the secondary school teacher is a vital element in reaching the student and in determining the quantity and quality of preparation of students who will be our future scientists, engineers, technicians, and informed citizens. Whatever might be done to help teachers in matters of preparation, pay, and recognition should result in better teaching, in more student (and teacher) interest, and thus in more and better-prepared students.

Third, there was agreement that in planning and carrying out any effective program of assistance, there should be the fullest possible communication and cooperation among the many responsible and concerned groups in science, industry, education, and government.

Although a number of the national societies have active programs in science education, these are for the most part conceived and carried out for the benefit of a single discipline or professional field. It is appropriate, therefore, that the NAS-NRC, which may be considered as a congress of sciences, should take a leading role in helping to determine how scientists and engineers can join their efforts in effective cooperation with the many other organizations and individuals whose foremost objective is to insure the best possible education of men and women.

The Arlington Pilot Program

A major step has been taken in this direction in the appointment of an Educational Advisory Board. This Board will serve to coordinate the interests of the many disciplines in the NAS-NRC organization and will act in close cooperation and support of the American Association for the Advancement of Science and its Science Teaching Improvement Program. By the same action which authorized the establishment of the Board, the NAS-NRC accepted responsibility for the sponsorship of a "pilot" program in the Arlington, Virginia, and metropolitan Washington, D. C., area. This program is designed to provide an opportunity to come to grips with many of the very tangible problems and obstacles facing our public school systems and, it is hoped, will serve as a model for other areas facing similar problems.

The broad objectives of the Arlington program are to bring effective assistance to the teachers of science and mathematics, to do this on a self-sustaining basis from the many resources largely available within the community served by the schools, and to give priority of emphasis to those factors which educators and scientists agree are fundamental to restoring the prestige and attractiveness of teaching as a desirable and rewarding profession. The plan for accomplishment contains many specific objectives:

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[1] *Physics Today*, Vol. 8, No. 6, June 1955. New York: American Institute of Physics.

1. Graduate-level preparation offered by science and education departments of local universities which are cooperating to develop new courses in mathematics, physics, chemistry, and biology to meet needs of junior and senior high school teachers.
2. Summer employment program for teachers in science and engineering environments.
3. Teacher participation in activities of professional community.
4. Guidance and career counseling aids.
5. Seminars.
6. Speakers and demonstrations.
7. Visits and field trips.
8. Series of invitational lectures for teachers and students.
9. Better information on scholarship and fellowship opportunities for both teachers and students.
10. Aid in text and manual selection.
11. Gifts and loans of laboratory and demonstration equipment.
12. Use of films and TV in supplementing and extending the coverage of good teaching.

Of the above, first importance is attached to improving the preparation of our teachers through the graduate program. Because effective progress in this direction will directly or indirectly reduce or remove most of the other problems, we have concentrated our initial effort in this sector.

National averages often bear little relation to the situation which exists in a single community or school. The shortage of qualified teachers of science and mathematics has reached a level, however, where few school sysetems remain unaffected. Discussions with superintendents, supervisors, and teachers in the Washington area confirm the local need, not only for qualified new teachers, but especially for suitable in-service courses for teachers who need and want to strengthen and broaden their comprehension of subject specialties. The several excellent fellowship and sponsored institute programs for in-service teachers offered each summer reach a comparatively few selected teachers, generally those who least need help. A survey of the nearby colleges and universities revealed many offerings for the graduate student in science but little or nothing appropriate for the teacher of science.

New Courses Available

Out of many discussions and with ideas and guidance freely borrowed, notably from the superintendent and teachers of the Arlington system, John Mayor of the American Association for the Advancement of Science, B. R. Stanerson of the American Chemical Society, and faculty members and officers of the local colleges and universities, a plan was worked out to make available a series of newly organized courses designed for teachers of secondary school science and mathematics and offered cooperatively by the eight area colleges and universities.

Obstacles to Participation

It was recognized that many teachers would not be financially able to attend these courses, even when offered locally, without assistance. For this reason funds are being raised from private sources to provide all fees and directly related expenses. Parent-teacher groups have volunteered to canvass members and neighbors for contributions. Business and industry groups, working in cooperation with the local Chamber of Commerce, expect to match these funds by gifts from their membership.

It may be observed that everyone believes in "good" education. Although individual definitions of what is "good" often differ markedly and occasionally

with deplorable heat, no one in our experience is apathetic about the desirability of having well-grounded and informed teachers in our schools. The loss of teachers' prestige is a matter of genuine concern to the average citizen and parent to whom the teacher remains the focal point of the school. Dismayed by controversy and with his confidence undermined by dissension on the quality and objectives of education, he understands and welcomes action which will enable the teacher to win the solid respect of his school and the community.

Conservative estimates based on the response thus far encountered indicate that no science or mathematics teacher wishing to participate will have to be denied support because of lack of community support.

A second obstacle to teacher participation, bearing particularly on his enrollment in summer courses, is loss of outside income from part-time or summer employment. This is a particularly serious matter with science teachers, among whom a large proportion are married men with dependent families. The loss of two months' wages, even at drugstore or filling-station scales, is often the slim margin of solvency. This is a shocking situation which the community must face and solve—and will solve when the import of current school policies is brought home to them. At present, the local school board is giving sympathetic consideration to a plan which will provide half-pay for the summer period when the teacher is attending classes. Additional stipends may be available from the scholarship funds for cases of particular hardship.

Other, non-financial obstacles are being worked out gradually. Perhaps the major of these is the matter of admission to graduate standing and obtaining credit for degree purposes for graduate teachers who wish to take subject matter normally covered in undergraduate courses. This is a complex problem, but one which obviously must be solved. The large number of teachers now in this category argues emergency measures. More fundamental solutions of benefit to future teachers will be found in revisions of undergraduate teacher preparation and certification requirements. The experience and insight gained during this critical emergency period, however, should be of inestimable assistance to those responsible for finding and effecting these better solutions. In the present program the participating universities have accepted the challenge, and it seems certain that credit for advanced degree purposes will not be an obstacle for the great majority of the local teachers.

Benefits Are Manifold

Mutual interests and problems should extend an initial graduate student relationship to an effective partnership, bringing enlightenment and benefits to both faculties and their students. It is expected that cross-appointments can be made between faculties and that in some cases the secondary school can serve as a ladder to university tenure appointments. This extension of opportunity should increase the attractiveness of teaching sufficiently to bring the secondary schools enough additional recruits to more than make up losses to the university and should contribute significantly in the matter of teacher prestige and program articulation.

Our purpose in undertaking this program is rooted in a sincere desire to work with and assist those who have primary responsibility in education at all levels with whatever help our resources can provide.

Requirements for the Science Teacher

JOHN MAYOR
Director, Science Teaching Improvement Program
American Association for the Advancement of Science
Washington, D. C.

NEARLY all professional scientific organizations have recently established committees on teaching. Some have carefully defined programs already in operation, and others are studying the problem of the improvement of science teaching with the hope that they may reach a conclusion about the best kind of activities that might be undertaken. The deep concern of scientists and scienctific organizations in science teaching results from the present and anticipated shortage of scientific personnel. This shortage promises to be as critical in the area of science teaching, probably even more so, than in any other area. Representatives of government, industry, and scientific organizations view the shortage as dangerous to the national welfare.

Scientists Have a Responsibility

Interest in science teaching has greatly increased because of the widespread criticism during the past 5 years of science programs in secondary schools, and of the programs and attitudes in secondary schools in general. Scientists recognize that, during the past 25 years, they have been neglecting a responsibility that now must be met. They also are aware that their responsibility for science teaching implies better programs of teacher education, more direct association with secondary-school teachers and secondary schools, and more participation in activities intended to interest the youth of America in the study of science.

Almost always when the crisis in science education is discussed by scientists, there is criticism of present teacher certification requirements. Scientists realize that they are not sufficiently familiar with secondary-school programs and teacher certification requirements and with the forces and agencies determining these programs and requirements. This is a part of their responsibility for science teaching which they feel they have failed to accept.

STIP in Review

In this article a brief review will be given of the Science Teaching Improvement Program of the American Association for the Advancement of Science as illustrative of the kind of activities in which the AAAS believes scientists can properly engage, in order to contribute to the improvement of science teachng. Attention will also be directed to the responsibilities of the science teacher and to pre-service and in-service programs of teacher education in science. Finally, some suggestions for better working relationships between professional educators and scientists will be made. It should be kept in mind that the term "science" is intended to include mathematics as well as biology, physics, and chemistry, the science subjects usually taught in secondary schools.

The action program of AAAS is planned to contribute to the improvement of science and mathematics teaching in the secondary schools and to increase the supply of college graduates qualified to teach science and mathematics. The program, supported by a grant from the Carnegie Corporation of New York, was reported in detail in two publications of AAAS.[1] Through STIP, the AAAS hopes to work with college and university science departments in their acceptance of teacher education as a major responsibility, encourage the development of special programs for preparing science teachers, interest students in becoming science teachers, contribute toward the movement for higher salaries for teachers, conduct studies in the improvement of working conditions for teachers, offer awards to secondary-school science teachers for excellence in teaching, and direct a pilot study in four states on the use of science counselors.

STIP is addressed first to scientists. Much of the activity in the program to date has been in conferences with scientists on college and university campuses, and in state and regional groups. Similar conferences are planned for 1956 in all parts of the country. Discussions will be devoted to the consideration of ways and means by which scientists and science departments can better accept their responsibility for teacher education, develop closer working relationships with secondary-school teachers, and acquire more intimate knowledge of secondary-school science and mathematics programs and teaching problems.

Cooperation in the project of the National Academy of Sciences-National Research Council in Arlington County, Virginia, has provided good opportunities for direct work with scientists. This project promises to become an unusually fine example of what can be accomplished in the improvement of science teaching at the local level, when scientists, community groups, P-TA's, school administrators and teachers, and college and university staffs unite to carry out a carefully developed program.

Cooperation — the Key

A part of the activities of STIP is in cooperation with national professional education organizations and their state branches. Such groups as the National Education Association, National Science Teachers Association, National Association of Secondary-School Principals, American Association of Colleges for Teacher Education, Cooperative Council on Teacher Education, and Association for Supervision and Curriculum Development will carry announcements on STIP in their publications, and representatives of STIP will participate in the programs of their national meetings. In December 1955, a Conference on Science Teacher Education was held in Washington under the sponsorship of American Association for the Advancement of Science, National Science Foundation, and the U. S. Office of Education. Officers and members of the Executive and Study Committees of the American Association of Colleges for Teacher Education were invited to attend. This conference provided an excellent opportunity for scientists and educators to discuss problems of importance to both groups, which too infrequently in the past have been attacked jointly by vitally interested groups on a national basis or on university campuses.

Because scientists have been disturbed about teacher certification re-

[1] AAAS Cooperative Committee Rpt., *Science* 122: 145-8; July 22, 1955. Ibid., *Science Monthly* 81: 109-14; *September*, 1955.

quirements, a plan to obtain representation from science on teacher certification commissions and councils in all states is being discussed with the National Association of State Directors of Teacher Education and Certification. Assistance of state academies of science at the local level is in process of organization.

STIP will sponsor a pilot study on the use of science and mathematics counselors in four centers during the school year 1956-57. Requests for centers have been received from colleges and universities in 15 states. The pilot study proposes to develop a method for "up-grading" the science instruction of teachers, many of whom are relatively inexperienced and may be lacking in several aspects of desirable preparation. Many teachers of science would profit from improved laboratory and demonstration techniques and greater knowledge of subject matter with stress on most recent developments in science.

Concern with the adjustment of teachers' salaries at the secondary-school level, as well as for the improvement of the working conditions of teachers, arose from the realization that inadequate salaries, together with heavy workloads and unfavorable working conditions, are important factors which have caused teachers to leave the teaching profession and others to be reluctant to enter it. The plan of STIP is to work with appropriate national agencies in their efforts to improve the salary situation. Experimental studies of particular aspects of the problem of working conditions may be started during the spring months.

A special committee has been established to review the entire question of interesting secondary-school students in science-teaching careers. When funds become available, a plan for awards for outstanding achievement in teaching secondary-school science and mathematics will be inaugurated. These awards would be given in national competition.

Responsibilities of the Science Teacher

In planning pre-service and in-service programs in science for teachers, it must be recognized that the science teacher has three major responsibilities. He must be able to contribute to a program for the more gifted students in science and mathematics which will carry the prospective scientist or scientific technician as far as he can reasonably be carried in his high-school years. This is particularly important because it is recognized that many scientists do their best work in research in their early years, and hence their preparation should be planned to bring them to the level of research as early as possible. The recent study on *College Admission with Advanced Standing* has done much to clarify what gifted students can accomplish in their high-school years.[2]

The science teacher also bears a major responsibility for science in general education. In this scientific age it is important that every citizen have some understanding of the nature, methods, and conclusions of science. Many of the best students will not go into scientific research and teaching careers and a large part of the remaining students will not have the aptitude or interest for science. Nevertheless, all of these people will be called upon to make decisions in their own lives and in their contributions to the general welfare, which will require some understanding of the progress of science

[2]Published by The School and College Study of Admission with Advanced Standing, January 1954.

and its impact on national and individual welfare.

The third charge of the science teacher is that of teaching science to the slow-learning student. This may be considered by some as a part of the responsibility for science in general education. It is given separately so as to emphasize that the science teacher has a responsibility for the slow-learning student as well as the gifted. New teachers must often be convinced of this, and teacher-education programs in science should take this into account. Ability grouping in mathematics in secondary schools has come to be rather generally accepted, and a plan for ability grouping in the other sciences is being developed in many high schools.

At a meeting in the fall of 1955, called by the National Science Foundation and the American Association for the Advancement of Science, representatives of about 16 scientific societies reported on the activities of their organizations concerned with science teaching. It was made clear that professional organizations of scientists in biology, chemistry, physics, and mathematics were concerned with the secondary-school course offerings in their areas. All had groups working on curriculum materials which would give more attention to current developments in science. They were also interested in the preparation of better and more modern texts and other teaching aids. It is recognized by these groups, whose members are usually associated with staffs of colleges and universities, that satisfactory materials can be prepared only by the secondary-school teachers themselves, and they saw their role as advisory only. If secondary-school teachers are to take advantage of the assistance of leading scientists in this work, it will be necessary that they become more familiar with late developments in subjects which they teach.

Teacher Education Program

To the scientist the pre-service and in-service education of the science and mathematics teacher seems to offer some special problems, perhaps more difficult than those in other areas. The advance of science in the past two decades has been so great and so far-reaching that a full-time research scientist has difficulty in keeping up with developments significant for his teaching. With the heavy load carried by secondary-school teachers, it is realized that this is almost impossible. When one compares this situation with the fact that many science teachers studied their science in college 10 to 20 years ago, and that even though the teacher has recently graduated his undergraduate courses in science are in many instances out of date, he faces a complex problem.

It must also be recognized by scientists that the principal reason teachers do not take courses and degrees in science when they attend summer sessions is largely the fault of the science departments. Summer offerings of science departments have included little that is appropriate for secondary-school science teachers, or to which they could be admitted at the graduate level. More scientists are now realizing that they must either offer special courses at the graduate level in science for teachers, courses appropriate for them to which they can be admitted and in which they have a good chance of being successful, or complain no longer that in-service teachers take all of their summer work in education courses.

The Block Semester

The teacher of mathematics would profit from a knowledge of recent de-

velopments and trends in chemistry, physics, and biology, as well as in his own area of mathematics, and the teacher of science needs to know about late developments in all of the sciences, and mathematics as well. This places a great demand on the time of the prospective teacher in undergraduate study. During the past few years there has been an increasing tendency in schools of education to try to provide, and require, a block-semester of student teaching. The term "block-semester" is used to indicate that the 15 or 16 hours of work carried by the prospective teacher during the semester will be centered around the student-teaching experience. Under this plan the student teacher is free to go to another community to spend full time in teaching for 8 to 10 weeks. The advantages of this kind of student-teaching experience to the undergraduate prospective teacher are fairly obvious. In general, student teachers in these programs appear to be happy with this arrangement and feel that the experience in the off-campus community has been valuable.

It must be borne in mind, however, that the undergraduate, if he is to be well prepared in modern mathematics and science, has already too many demands on his time. The value of the block-semester plan must be weighed against the desirability of greater opportunity to learn more about modern work in the field in which the student may eventually teach. The longer period for student teaching which interferes with adequate subject-matter experience is open to serious question in a four-year teacher education program.

Professional Education Requirements

The wide concern of scientists with the teacher shortage and teacher education has brought frequent criticism of requirements in professional education. Justification can be given for the usual requirement of 15 to 20 semester hours in professional education. If more time must be devoted to student teaching, then it probably should be taken from other education courses. It is my preference that the requirements in professional education should not be increased even by the provision of greatly extended time for student teaching in off-campus schools.

Despite the fact that more than one-half of the high schools have fewer than 100 pupils enrolled, teacher education programs have been too much influenced by the needs of this type of school. A substantialy smaller part of the secondary school pupils and teachers are in these high schools. Teacher education can better be directed at preparing teachers for schools which are of a size approved as satisfactory. If this principle were to be accepted, more time could be devoted to requirements for a teaching major, desirable related courses, and general education. Many colleges for teacher education could profitably re-examine their courses of study from this point of view.

Recommendations

The shortage of scientists is critical for the national welfare. The necessity for improvement in science teaching in order to meet the shortage is generally accepted. If scientists are to offer their proper contributions to the improvement of science teaching, it will be necessary for them to work with those responsible for teacher-education and secondary-school programs. Satisfactory cooperation will require, first, an acquisition of more knowledge and understanding of these programs. The American Association for the Advancement of Science believes that one way

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in which this can be achieved is to afford scientists an opportunity to work with teacher education personnel and organizations. Both scientists and those in professional education can profit from better understanding through the airing of their views. Much less criticism in both directions would result if the two groups were to discuss openly their points of view on problems of common concern.

Scientists are willing, as never before, to give their time to the consideration of ways and means for improving science teaching. They believe that they can make a contribution to this major goal by working with those who make decisions about schools and school programs. They will approach such an opportunity with a desire to learn and to discuss openly, and with good will, questions which have caused much anxiety.

For the development of better working relationships, it is suggested that scientists should:

1. Examine and improve their course offerings and major requirements for prospective teachers, with advice from staff members in education.

2. Offer special courses for graduate credit which are realistic for teachers and which will enable teachers to keep up to date in their subject field.

3. Visit schools and take part in teachers meetings.

4. Take an active part in P-TA's and other community groups working for the betterment of schools, and be willing to serve as school board members.

5. Offer their services in efforts directed toward interesting boys and girls in the study of science.

6. Work with teacher certification commissions and councils.

7. Make known their points of view on the programs and work of our secondary schools after careful study of the goals and problems of the schools and the efforts of other agencies in their behalf.

Professional educators should welcome the current, new interest of scientists and other academic groups in the schools, seek their counsel in the solution of school problems and their participation in school and school-related professional activities, and resolve to assist in carrying out the suggestions set forth above.

Such cooperative action on the part of both groups is in the interest of national welfare and essential to our progress.

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The American Historical Association and the Teaching of History

SIDNEY PAINTER
Chairman, Department of History
The Johns Hopkins University
Baltimore, Maryland

THE American Historical Association has never been a "Learned Society" in the narrow interpretation sometimes given to that term. It has never considered the encouragement of research and the production of scholarly monographs as its sole or even its dominant function. At one time or another, as it saw the need, it has participated in practically every type of historical activity. Within the bounds set by its resources the Association is always ready to play its part in any enterprise of value to history and historians.

The Association has always felt a special responsibility for the teaching of history at all levels in American educational institutions. Since 1895, seven committes of the Association have produced and published more than twenty volumes of reports on various aspects of this subject. These reports have been widely used and have played an important part in developing the curricula used in secondary and higher education in this country.

These reports have been at least partially responsible for the fact that history has a firmly established place in our curricula. Although many members of the Association are troubled by the content of some courses labelled "Social Science," there is a general feeling that adequate time is allotted to history. If the courses of a definitely historical nature were all well planned and effectively taught, the situation would be quite satisfactory from the Association's point of view. Hence we believe that our chief problem is to assure high-quality teaching.

The Dominant Issue

Now the central basic problem facing the entire educational profession is the recruiting of an adequate number of able teachers. Actually there is only one concrete thing that we, as members of the profession, can do to further this cause. If all of us, wherever we teach, whether in secondary schools, colleges, or universities, marshall all our energies and capacities into teaching as effectively as we can, I feel sure we can draw into our ranks more of the able students than we are now getting. The learned disciplines are fascinating and exciting, and if we do not make our students realize this, it is at least partly our own fault.

Society's Responsibility for Recruitment

But the remainder of the task of recruiting an adequate teaching force must rest on society as a whole. Better salaries are needed throughout the profession. I do not ask that they be so

high that people are attracted to teaching because of its financial rewards, but I would like to see fewer genuinely interested students repelled because the rewards are so meager.

Society as a whole must decide that teaching is important and give the profession the prestige it deserves. Parents must dream of their children becoming teachers rather than feel somewhat horrified if they turn in that direction. All this, however, is beyond the range of a single professional society.

I hope that some day all the learned societies will create a central agency to work on the broad question of the recruitment of teachers. Moreover, unless our statistics are completely unreliable the shortage of teachers of history is much less acute than in other fields. While I must admit I was rather horrified a few years ago to see a rather poor student who had graduated as a major in history without ever taking a course in physics assigned to teach physics in a high school, I should like to see some prospective history majors diverted to physics at an earlier stage in their careers.

Aid Is Forthcoming

With all these considerations in mind the American Historical Association came to the conclusion that the most valuable work it could do would be to assist teachers of history to become more effective. While we are interested in the teaching of history at all levels, we are inclined to believe that we can be most useful to teachers in the secondary schools and junior colleges. These teachers face grave problems. Often they have to teach several subjects and hence their preparation is bound to be more or less inadequate. And they have little spare time in which to remedy this lack of preparation. They need aid, but the utilization of the aid should consume the least possible time and energy. The Association hopes that if it can give this aid effectively, it will achieve an-

The American Historical Association has established a Service Center for Teachers of History. To carry on the activities of the Center the Association has received a grant of $148,000 from the Ford Foundation.

The Service Center will prepare and supervise the preparation of various types of pamphlets to aid secondary teachers: graded reading lists, pamphlets summarizing recent research, and interpretations in the fields of history taught in the schools, discussions of objectives and values of historical study, and other subjects which conferences with teachers show to be useful. The Association has no intention of entering the field of methods of teaching, already amply cared for by experts in education.

The Service Center has been established on an experimental basis for three years. It is immediately concerned with the growing gap between the teachers in the schools and the experts working on the frontiers of historical knowledge. Historical research, like that in every other discipline, has become increasingly complex and specialized in recent years. The teacher, who is not and should not be a specialist, cannot keep up with this research, and as a result it often takes twenty-five or thirty years before important new facts or interpretations are reflected in school teachng. Conversely, the specialist is unaware of the problems of the teacher and seldom puts his material in a form which can be used in the schools.

The Center furnishes active and direct assistance in the strengthening of courses in the schools and in the furnishing of effective teaching materials. At the same time it acquaints the specialists in history with the problems of the schools.—Boyd C. Shafer, *Executive Secretary*, American Historical Association, Library of Congress Annex, Study Room 274, Washington, D. C.

other end which it regards as extremely important—the unification of the historical profession.

In its early days secondary school teachers were active participants in the Association. This is no longer true and in one sense cannot be. The profession is too large to operate in a single association. The meetings of the American Historical Association and the material published in the *American Historical Review* should continue to be aimed at the college and university teacher. The National Council for the Social Studies is doing an excellent job as the central organ of the secondary school teachers. But we should like to have all teachers of history feel that they and the members of the American Historical Association are engaged in a common effort with a common end in view. I might add that the American Historical Association and the National Council for the Social Studies have always cooperated closely with each other and are determined to continue to do so.

An Idea Takes Form

At the moment the Association has simply a plan in the form of a proposal for which it is seeking funds. Unlike the Modern Language Association we cannot point to valuable work already accomplished. (*Note:* Since this article was prepared the Association has received a grant from the Ford Foundation, which will enable it to put its plan into operation. See statement by Boyd Shafer.)

The Association has established a standing Committee on Teaching. It consists of four university professors of history, Arthur E. Bestor, Erling M. Hunt, Sidney Painter, and Joseph R. Strayer; two professors of education, Francis Keppel and Edgar B. Wesley; Arthur Dondineau, Superintendent of Schools of Detroit; Miss Edith Starratt, a teacher of history in a secondary school; and Mrs. Eugene Meyer representing the public. Thus, the Committee represents a wide range of interests and experience.

This Committee will establish a Service Center for Teachers of History. This Center will have a full-time director with adequate secretarial and clerical assistance. At the moment the Asssociation contemplates two rather different lines of activity.

The Service Center

One function of the Center will be to facilitate cooperation between teachers of history at all levels. We hope to establish a panel of college and university teachers who will be both willing and able to assist secondary schools and secondary school teachers in any way possible.

Thus, if a state association of history teachers would like a presentation on recent new interpretations of important phases of modern European history, it would ask the Service Center to suggest a member of its panel. If a superintendent of schools or a principal should want aid in planning a curriculum, he could obtain it in the same way. One thing must be emphasized. The initiative must come from the schools and the teachers. The Association does not want to proffer unwanted advice and aid. But we feel that it is important to our purpose that school administrators and teachers should know that there is a group of members of the Historical Association in their region who are available if desired. Frankly, this will be an experiment. It may not be successful. But the Association has hopes that it will, and at least it will demonstrate the active interest of the Association and its members.

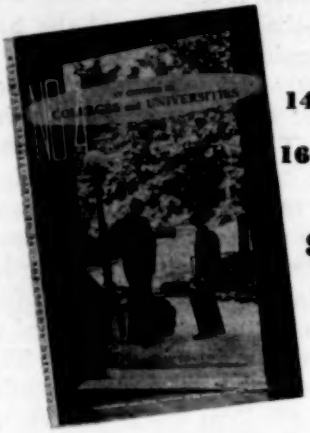
Another function of the Center will be to arrange for the production, publication, and distribution of materials which seem likely to be of help to

teachers of history. Any definite decision as to what these will be depends on investigation of what teachers want and need. The Association tentatively believes that very brief, carefully chosen bibliographies for teachers would be helpful. Thus, if a teacher in a World History course felt that he was poorly prepared on some phase of the subject, he could find in one of these bibliographies two or three suitable works with short but adequate descriptions of their nature. Most bibliographies are too long and complicated for the hard-pressed teacher.

Also, graded reading lists for the students might well be useful. It is extremely difficult for teachers to keep abreast of recent discoveries and reinterpretations. Pamphlets which give the most recent opinion on important historical events and movements could well be valuable. There are obviously a wide range of possibilities. But let me emphasize again that the Association is not planning to decide what the teachers need and give it to them but rather to find out what they want and believe they can use.

The Road Ahead

In closing I should like to make clear that the members of the American Historical Association and its Committee on Teaching realize that in general they know very little about the problems faced by secondary school administrators and teachers. They have no desire to attempt to impose ideas but they believe that they can give useful advice on the preparation of teachers of history in the subject matter involved and in the content of history courses. They are determined to cooperate and work with every organization which feels they can be of aid to it in working toward the common goal — the improvement of the system of education in general and of the teaching of history in particular.



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A Learned Society Looks at Foreign Language Teaching

WILLIAM PARKER
Director, The Foreign Language Program
The Modern Language Association of America
New York, New York

MY REMARKS concern a national learned society that for some decades was so *very* learned, so preoccupied with problems of scholarship in its field, that it had to rediscover its full responsibilities to American education. Today it is trying to discharge these responsibilities with a mixture of humility and determination. The story of how this change came about is so long and complex that it must be oversimplified if I am to move swiftly from history to matters of mutual concern.

The Modern Language Association of America consists of about 8,500 teachers of English and the modern foreign languages, most of them on the faculties of American colleges and universities. The Association has always welcomed to membership high school and elementary school teachers of English and foreign languages, but, until almost yesterday, few of these persons found much in the journal, in the program of the annual meeting, or in other activities of the Association to attract or to hold them. In the early years, however, we were deeply concerned with professional and pedagogical problems; indeed, we were founded in 1883, and named ourselves the *Modern* Language Association because we believed that English and French and German deserved a respected place in college and high school curricula along with the *ancient* languages. The American people soon agreed and, our point won in a matter of several decades, we settled back, no longer to issue committee reports in cooperation with the National Education Association (as we did on two occasions), but rather to discuss graduate training and the promotion of research in our rapidly developing fields.

The Foreign Language Program

It was chiefly World War II, I suspect, that wrought the great change in basic attitudes and assumptions among MLA members. Shortening a long story, in December 1951 the constitutional statement of purpose was broadened and in October 1952 the Foreign Language Program was launched. This Program, originally envisaged as a three-year investigation, was supported by a grant of $120,000 from the Rockefeller Foundation, which later gave an additional $115,000 to prolong the inquiry until October 1958.

Although being a professor of English at New York University and never having taught a foreign language, I have been, from its beginning, Director of what our profession now calls the FL Program (FL for Foreign Language). It has been an education for me, to put it mildly. I have had to study the history of foreign language teaching in this country, including all the attacks on language study; to assess, as care-

fully and candidly as possible, the strengths and weaknesses of curent language instruction at all levels; and, most important of all, to weigh our resources and potentialities against the ever increasing need for foreign language skills in our citizenry, as this need has been brought home to me by my reading, investigations, and talks with many people.

The formal purpose of the FL Program is to discover what the role of modern foreign languages *should* be in American life. Such an inquiry implies, of course, constructive action to meet any needs discovered, from supplying information to reforming a whole profession if the situation seems to call for it. Our offices at 6 Washington Square North, in New York City, are already a clearinghouse to such an extent that six people, working full time, can hardly keep up with the mail that pours in from every state in the Union, and from abroad; and the profession is now in the gradual process of reforming itself pretty thoroughly. For the answer to our basic inquiry is *as clear as it is shattering,* catching us, as it does, with far too few foreign language teachers prepared to do what the public wants a greatly increased number of language teachers to do hereafter.

Increasing Importance of Foreign Languages

Let me make my point as simply and unsensationally as possible. In three years I have encountered a variety of people who doubt whether foreign languages should be *required* at this or that level, or even taught at all in the elementary schools; and I've met a lot (with whom I have usually agreed) who don't like the dead way in which living languages have been taught in this or that school or college. But in three years I have yet to meet (or read of) a single person who does not think that, with our present international responsibilities in an increasingly smaller world, we need *more* Americans with knowledge of *more* foreign languages; and I have yet to meet anyone, apart from a few stone-age language teachers, who does not say that language teaching should be made *functional,* with more emphasis on speaking ability and listening comprehension.

I want to underline this point at the risk of seeming tactless. In the early days of the FL Program, a considerable number of foreign language teachers, hoping to enlighten an ignorant English teacher, warned me solemnly against professional educators, who, they said, would be maliciously opposed to everything I attempted. I now know enough of history to understand how I happened to be given such bad advice (and I consider it one of my most important duties in the days ahead to help leaders among foreign language teachers persuade our profession as a whole that *cooperation,* not resentment, is the new watchword). Some of my language colleagues will doubtless say that I lead a sheltered life, but in three years I have yet to meet a single professional educator who wanted to *minimize* language study in our schools or colleges, and my files contain letters from at least a hundred persons—among them some of the foremost people in professional education—saying that language study *must* receive more emphasis, many linking it to our national security.

If I have thus far said anything that has surprised anyone, turn for the evidence to a booklet I wrote in 1954 at the request of the United States National Commission for UNESCO. It is entitled *The National Interest and Foreign Languages* (available from the Government Printing Office, Washing-

ton, D. C.; $.45), and is essentially an answer to the question: What *should* be the role of foreign languages in American life? It draws its facts, not merely from the world of education, but also from American business, government, and society. If it is forgivable for an author to recommend his own work, I think I can say that this little book will show, as collecting facts for it certainly showed me, that we have a long way to go if we are to give the American people the *amount* and *kind* of language instruction they expect.

The Present Opportunity

We trust to have cooperation and sympathetic understanding of some of our vexing problems. I shall suggest but a few of them. First, let me mention the sheer *amount* of language instruction now available, since so many people are saying it is in the national interest for us to have more Americans with language proficiency.

Of all public high schools in the United States, *56.4 per cent* offer *no* modern foreign language instruction to their students. The situation differs, of course, from region to region. In Connecticut, Maine, New Jersey, and Rhode Island, *every* public high school offers some instruction in modern foreign languages; in the Dakotas, Iowa, and Nebraska, not one high school in ten does so. That national figure of 56.4 per cent, however, has significance for anyone who believes that all American youth should have at least the *opportunity* to study languages. Requirements, length and character of instruction are not in question in a *majority* of our public schools; modern languages are simply not available.

More than 1,100 persons on student ships last summer chose to study German in shipboard classes, and approximately 21,000 servicemen last year elected to study German through the correspondence courses and materials offered by the Armed Forces Institute, but no German is taught in any public high school in the states of Alabama, the Carolinas, Florida, Mississippi, New Mexico, Tennessee, Vermont, and Wyoming. Not one American high school student in 100 is currently studying German.

More Americans visit Mexico and other Latin American countries each year than are currently studying Spanish in all our high schools put together. The percentage of students enrolled in Spanish courses in our public high schools is about 7.3—a drop of almost one per cent during the past five years. French is worse off than Spanish; about 5.6 per cent of the total public high school enrollment is currently studying French. In 38 states for which I have complete enrollment figures a total of nearly 250,000 students were studying French last year—a figure that might thoughtfully be compared with the nearly 350,000 American tourists who visited Paris last year.

No public high school offers a *third year* of instruction in any modern foreign language in five states that I have identified, and none offers a fourth year in at least nine additional states.

Please do not misinterpret my motives in citing these statistics. I am not interested in providing jobs for unemployed language teachers. As a matter of fact, if the situation briefly outlined here is swiftly improved—as so many educators and citizens are saying it *must* be—I, for one, do not know where we are going to find the teachers.

Changes Are Called For

It is even worse than that: the American people not only want *more* language instruction in our schools, they very decidedly want a *kind* of language instruction which, to a considerable extent, they are not getting right now, and

are not going to get unless leaders among language teachers and among professional educators come together and develop ways and means of making sure that future language teachers, as graduated by our teachers' colleges and our liberal arts colleges, are really prepared for their role in the second half of the twentieth century. How is this to be done?

Let us not deceive ourselves — some drastic changes are called for. I wish I could tell in some detail what language teachers are already doing about it—how exciting and different some of the new teaching is! Significant things are happening. During the last three years the MLA has brought to New York for two- or three-day conferences 212 persons from all 48 states; has established a nationwide network of communication with language teachers at all levels; has sought advice from psychologists, linguistic scientists, cultural anthropologists, and other social scientists; and, in general, has tried hard to throw new light on an old problem. Instead of enumerating our projects, let me briefly describe two, from which the nature of both our activities and our intentions may be inferred.

Mixed Emotions

Foreign languages are being taught today in the public elementary schools, below grade 7, in at least 357 American cities and towns in 44 states. Nearly 100 of these programs began in 1953, *over* 100 began in 1954, and no one yet knows how many started in 1955. The movement has such popular support that it threatens to snowball, and if it does, it will be educationally disastrous, for where are we going to find enough qualified teachers of languages when there is already a serious shortage of elementary school teachers in general? The MLA feels that it has some responsibility for keeping this movement within reasonable bounds, and believes the best way of doing it is to encourage controlled pilot programs, to urge testing and objective appraisals of results, and to insist that teachers—in this area so mercifully free from the old prejudices and preconceptions of language instruction — effectively teach children to speak and understand *a real language in a real situation.*

To encourage and point the way to really modern instruction, the MLA published, in September 1955, a 90-page, experimental Teacher's Guide, which had more than 40 authors. Entitled *Beginning French in Grade Three,* and the first in a projected series, it attempts to collect, and to present simply, the best thinking of our profession on ways and means of bringing eight-year-olds to enjoy the experience of acquiring a second language and learning about a different culture. It is a refreshing book, and an exciting product of truly collaborative effort—a hint of how textbooks might hereafter be produced.

The second point I want to mention is to me even more exciting. A detailed statement has been produced and has been endorsed for publication (in most cases unanimously) by the executive boards of the seven national and nine regional organizations of language teachers, and also by the Modern Language Committee of the Secondary Education Board and the Committee on the Language Program of the American Council of Learned Societies. This statement sets forth definitely and clearly and, I trust, realistically, what the profession holds to be the minimal, good, and superior qualifications for secondary school teachers of modern foreign language. Over 80,000 copies have been distributed.

Standards Must Be Maintained

When I was privileged to meet with the Executive Committee of the Council on Cooperation in Teacher Education a short while ago, one of its members said he wished that the learned societies would tell those professionally concerned with teacher education precisely what they regarded as adequate preparation in the subject matter fields. I do not know when I have enjoyed a meeting more! For the thing has been done—honestly, painstakingly, authoritatively. Foreign language teachers in America are on record as saying: *"We assume no responsibility, and will accept no blame, for the products of instruction done by persons who cannot meet the regrettably low minimal standards we have spelled out. Let it be clearly understood that the foreign language experience of children subjected to teachers who are inadequately prepared will be an indefensible waste of time and money."*

We realize that by producing and publishing such a statement we have taken only a *first step* toward solving a problem. We know that very soon now we must obtain practical advice and cooperation. We are learning how to integrate language learning and social studies (we have held a seminar on language teaching and international understanding, the report of which is published in the *Congressional Record*), but we need to learn how to integrate closely the subject matter and professional preparation of language teachers. We'd like the opportunity of explaining to sympathetic educators what is actually involved in mastering language skills adequate for teaching today, because we shall need their cooperation if we are to make our statement on qualifications a constructive, helpful instrument instead of a threat to poor teachers and a hand-washing gesture before the public.

It is, of course, essential to develop practical, effective, inexpensive tests of the qualifications we have set forth, and we are beginning to work on this problem. We know in general what they will be, and we hope for the expert help of the Educational Testing Service. Then we shall need to try out these tests—experimentally—in a few carefully selected state systems and institutions.

Implications

But let me candidly spell out the implications of what we hope to do. We are saying firmly that the time has at last come in teacher preparation to distinguish sharply between schooling and education, between form and substance, between credits and recommendations on the one hand and tested proficiency on the other. We will not try to speak for other subject matter fields, but we are now saying that in *ours* the present system of certification of teachers has resulted, to a distressing extent, in disappointment to students and parents, in grave damage to the integrity of our profession, and we want to see it improved as soon as possible.

Foreign language teachers in American schools and colleges, standing, as the U. S. Commissioner of Education said recently, on the "threshold of a renaissance," face many new problems on which they will need, and indeed will seek, friendly counsel. While I do not expect any group to share our enthusiasm for promoting language study, I do expect them to share the primary motive that lies behind all our activities—concern for the welfare of American education. This is good, solid ground upon which men of good will can meet, can occasionally disagree, but can learn to work together.

American Council of Learned Societies: Activities Related to Education, 1955

J. F. WELLMEYER, JR.
Staff Advisor on Personnel Studies
American Council of Learned Societies
Washington, D. C.

THE American Council of Learned Societies, founded in 1919 and incorporated in 1924, is a federation of twenty-five national organizations devoted to the encouragement of humanistic studies. To this end the Council endeavors to increase interest in these studies through careful planning and development of activities, both in the established disciplines and in otherwise neglected intellectual areas. These activities include the initiation and promotion of research and the dissemination and utilization of the results of this research; the training of individuals for vital teaching; and the representation at home and abroad of the interests and accomplishments of American scholars in humanistic fields.

Since 1953, as a result of strongly expressed interest on the part of constituent societies, the ACLS has had a Committee on the Relation of Learned Societies to American Education (CORLSAE). This Committee has encouraged societies to study educational problems and has been attempting to formulate a coordinated interdisciplinary program. It has provided for exchange of information on society activities and liaison with educational groups and scientific societies interested in educational matters.

Among the many constituent societies of ACLS which are engaged in activities related to American education are the following:

American Academy of Arts and Sciences. The Academy has held discussions of the problem, and a committee prepared a study "On the Conflict Between the 'Liberal Arts' and the 'Schools of Education'" (Ulich, Keppel, and Jones, *ACLS Newsletter,* Vol. II). No active committee now exists in connection with the humanities and educational questions, although there is a Committee on School Science. The Council of the Academy has invited suggestions for useful programs in other areas, but none have been forthcoming. Of some relevance is a plan for a conference, in cooperation with the Institute for the Unity of Science, to be entitled (tentatively) "A Modern Image of the World—the Joint Responsibility of the Sciences and the Humanities." Plans for this meeting are still fluid.

American Economic Association. The AEA has a long history of activity in the field of education. Referring only to recent activities, a committee report, *Teaching of Undergraduate Economics* (H. Taylor, Chairman), was published as a supplement, December 1950, to the *American Economic Review.* A "Roundtable on the Teaching of Economics," sponsored by the AEA, was held at the meeting of the International Economic Association, Tailloires, France, in 1951. This resulted in a UNESCO publication, *The University Teaching of Social Sciences: Economics* (Columbia University Press, 1954). The Committee on Graduate Training in Economics obtained a grant and produced a report, *Grad-*

uate Education in Economics, by H. R. Bowen, supplement to the September 1953 *American Economic Review.* The Committee on Graduate Training in Economics was reconstituted in 1954 as an *ad hoc* Committee on Economic Education to permit the incorporation of secondary level problems, and problems of economic education of adults in various fields. The 1956 Directory questionnaire will attempt to discover those members with particular interests in these matters. The new committee met with a Conference on Economics and General Education sponsored by Syracuse University and the Joint Council on Economic Education in August, and planned to meet at the time of the annual meeting of the Association in December. The Chairman of the Committee discussed activities with the Executive Committee in March. The responsible individuals are: Professor B. W. Lewis, Oberlin College, Chairman of the Committee on Economic Education, and Professor James Washington Bell, Northwestern University, Secretary of the Association.

American Historical Association. The AHA has had various committees and commissions for many years concerned with the problems of education. More recently, a new Committee on Teaching was appointed and two meetings were held during 1955. The Committee devised a plan to assist in the improvement of history teaching in the schools and obtained a substantial grant to carry a three-year program. The program provides for the preparation of pamphlets to aid secondary school teachers; for the provision of professional consulting services for school administrators and teachers; and for the establishment of a national Center which will organize and coordinate these services under the direction of the Committee on Teaching. The Chairman of the Committee on Teaching is Professor Sidney Painter, Johns Hopkins University. The Director of the Service Center which will be established in Washington in June 1956 is to be Dr. George Carson. The Center's functions will come under the general administrative supervision of Dr. Boyd C. Shafer, Secretary of the Association, Library of Congress Annex, Washington, D. C.

American Musicological Society. The Society has a Committee on Accreditation of the Degree Doctor of Philosophy in Musicology which met in April, 1955. The Executive Board has discussed the problem of drawing up a statement of uniform requirements for admission and completion of requirements for the A.M. and Ph.D. degrees in musicology. The individual responsible for this activity is Professor Archibald T. Davidson, Harvard (Emeritus). Professor Davidson's report has not yet been submitted.

American Oriental Society. The AOS appointed a committee under the chairmanship of Dr. Woodridge Bingham, University of California. The committee arranged a session at the annual meeting of the Society at Toronto in April of 1955. Four invited papers were read, and at the business meeting, Dr. Bingham reported on the discussion and indicated that there has been relatively little response from the membership. As a result, the committee was not reappointed. Under the circumstances, responsibility for any residual matters in this field rest with the Secretary, Ferris J. Stephens, Sterling Memorial Library, New Haven, Connecticut.

American Philological Association. This society has an active Committee on Educational Training and Trends which met on numerous occasions dur-

ing 1955. Surveys of the status of Latin studies were made in three states. A report was rendered at the business meeting of the Association in December 1955 calling for the creation of three committees: "one on increasing enrollment in Latin 3 and 4; one on revising content of second year secondary school Latin; one on liaison between college and university Latin teachers." The Chairman of the Committee on Educational Training and Trends is Professor S. D. Atkins, Princeton, New Jersey.

American Philosophical Association. The secretary reports widespread interest in educational matters within the Association. Both the Western and Pacific Divisions have associated with them a Conference on the Teaching of Philosophy which holds annual discussions. The Western Division Conference met in 1955 at East Lansing, Michigan, with 150 persons present to discuss Melzer's *Philosophy in the Classroom* (University of Nebraska Press, 1954). In December 1955, the Eastern Division held a symposium on the Philosophy of Education. The Association has a Committee on Teacher Training and Recruitment which is to become a sub-committee of a newly formed Committee on Philosophy in Education. Pending the appointment of a chairman of the latter committee, the Secretary-Treasurer, William H. Hay, is responsible for these matters. His address is Bascom Hall, University of Wisconsin, Madison.

American Sociological Society. The society has had, for several years, a Liaison Committee for the National Council for the Social Studies. This Committee has been concerned with the expansion and improvement of sociological preparation at the secondary level. At its meeting in September, 1955, the Committee recommended that its activities be expanded to cover all activities concerned with the preparation of teachers and teacher education, in addition to its former function. This recommendation was approved by the Executive Committee, and the Liaison Committee is now considering the nature of its expanded functions. Its name will be changed as well. At the 1955 annual meeting, sessions were held on the teaching of sociology and on sociology in the education of teachers. Chairman of the Liaison Committee is Wilbur B. Brookover, Social Science Building, Michigan State University, East Lansing, Michigan.

Archaeological Institute of America. The Institute has no organized committee assigned to this function. It has, however, prepared a guidance pamphlet, "Archaeology as a Career," for which there is a brisk demand, and a number of documentary films. Lecture programs are offered by the affiliated local societies, many of which have large student memberships.

Association of American Geographers. The Association has taken no formal action on educational problems as yet. Dr. Meredith Burrill, however, is currently making a study of the problem, and further discussion by the Council and members is expected.

College Art Association. The Board of the Association discussed educational questions at length in October 1955 and again in January 1956. A broad study of society functions is now going forward under the direction of the Secretary, Dr. Craig H. Smyth, Institute of Fine Arts, New York University, 17 East 80th Street, New York City.

Far Eastern Association. At the 1955 annual meeting, the Association held a panel discussion on "Reaching the

Common Man in America with Far Eastern Materials," and appointed a Committee on the Relation of Learned Societies to American Education of the Far Eastern Association. The Committee met at Ann Arbor, Michigan, in November, 1955. The Executive Board has corresponded about the collection and distribution of packets of material of use to teachers and educational institutions. The new secretariat of the Association at Ann Arbor will function as a service center for these materials. The Association will be represented at a panel discussion of CORLSAE activities in the Social Sciences held at the American Association of Colleges for Teacher Education in February, 1956.

Linguistic Society of America. The Society has no committee in the field of education. However, the ACLS Committee on the Language Program, which includes a number of leading linguists, has taken an active interest in the field. Its chairman took part in an invitational conference held in connection with the Modern Language Association meeting in December, 1955, which recommended that all teachers concerned with languages or the language arts at any level should obtain a one-year course in the structure of language centered on English. The Committee has also recently discussed the problems of language instruction at the junior high school level. One member is working on an experimental application of linguistic principles to English teaching in the public schools of one of the Maryland counties with the active support of a leading publisher. The Committee has established a subcommittee on American Education, Archibald A. Hill, Box 7790, University Station, Austin, Texas, chairman.

Modern Language Association of America. The MLA has a Foreign Language Program inaugurated by the Executive Council in 1952. It has had two foundation grants, and the Association now regards the Program as a continuing function of the organization. Since 1952, approximately 200 persons have been brought to conferences from all 48 states. To date, most of the conferees have been foreign language teachers, but conferences in the planning stage will bring in a larger number of specialists in other fields. Secondary school teacher preparation is currently being emphasized. In 1955, two meetings of the Steering Committee for the Foreign Language Program were held, and a General Meeting at the annual meeting of the Association was devoted exclusively to this program. Members of at least five other language organizations and of the Linguistic Society of America attended. Inquiries may be addressed to William R. Parker, Executive Secretary, MLA, 6 Washington Square, North, New York 3, N. Y.

Society of Biblical Literature and Exegesis. A special committee was appointed in 1954 to cooperate with the ACLS on educational matters. One meeting was held at the time of appointment; none in 1955. The Society has a companion organization, the National Association of Biblical Instructors, which met just prior to the SBLE meeting of 1955 and with which SBLE held one joint session. There is widespread concern with education among members, but many feel that the NABI is the proper organization through which to act. The *Journal of Bible and Religion* deals with methodological questions and other teaching problems, has a teacher placement office, and has published syllabuses for preparatory school use. Professor Charles F. Kraft, Secretary of the Society, is the person in charge.

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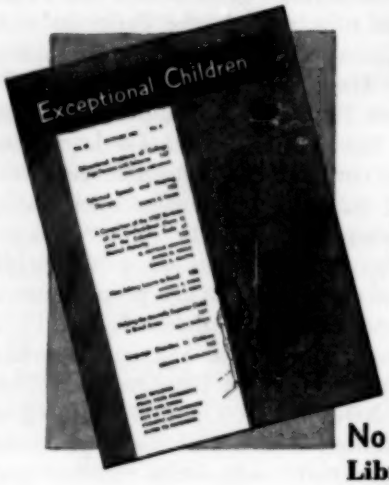

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The 1956 Teacher Supply and Demand Report

NEA RESEARCH DIVISION

AT THE White House Conference on Education and almost all of the related conferences in states, regions, and localities, one of the major questions receiving thoughtful attention was, "How can we get enough good teachers—and keep them?" Everywhere the final conclusion was the same: there is no shortcut to an easy solution of this problem; it is an inseparable part of a larger shortage of trained manpower, one which affects most of the professions and numerous other occupations. As the spotlight was focused upon the shortage of persons qualified and available to carry the expanding load of teaching in the elementary, secondary, and higher educational institutions, many citizens came to the sober realization that the problem belongs to them, not to the professional educator alone. The task ahead is to sustain and further extend this public interest.

Why are the schools caught in this squeeze? What causal factors can be identified? And what avenues of relief seem to be open?

First, these eight specific causes of the shortage are obvious:

1. The American public has called upon the schools to accept ever-expanding responsibilities beyond the financial resources supplied for their support.

2. The upsurge in total numbers to be educated—the increase in the percent of the total population in the school-age brackets—is unprecedented.

3. For the past ten years—1945 to 1955—the number of youth attaining maturity (the 18-21-year-old group) has decreased at the rate of about 100,000 per year.

4. A new concept of manpower needs for national defense in peacetime has been generally accepted.

5. The growth and diversification of industry, commerce, business administration, government programs, and professional services have given rise to a greater demand for highly trained manpower than has been produced.

6. Occupational opportunities for educated women have expanded enormously.

7. Since 1950, the number of graduates to emerge from colleges has steadily decreased—from 434,000 in 1950 to only 287,000 in 1955.

8. The trend toward earlier marriages has been steadily upward.

The 1956 Teacher Supply and Demand Report is the ninth annual study of teacher supply and demand in the United States which has been conducted under the sponsorship of the National Commission on Teacher Education and Professional Standards. This report was prepared by the NEA Research Division in coopeartion with the Commission. The 1956 report, like each of the preceding ones, was under the immediate supervision of Ray C. Maul. Dr. Maul is Assistant Director of the NEA Research Division.

The Commission expresses its appreciation to the Research Division and to Dr. Maul for their cooperation in the preparation of this important report.

The 1956 report is published exclusively in the Journal of Teacher Education.

The combined force of these far-reaching changes in the American scene has greatly sharpened the competition for the services of many thousands of young people with talent for and natural interests in teaching. The situation has become so acute that some students of the general manpower problem question the ability of the nation to continue to staff the schools in the manner necessary to give every child a fair educational opportunity according to his ability. The evidence is overwhelming, however, that no such dire catastrophe need befall the schools. These seven encouraging factors are clear.

1. Our national income is at an all-time high; a really substantial increase in the support of education—the support required to make teaching a truly competitive occupation—would not be out of keeping with the many other financial tasks we voluntarily assume.

2. The manpower pool of youth reaching maturity is now at the point of expansion after ten consecutive years of steady decline; each future year will see a larger number in the 18-21-year bracket.

3. College enrollments are in an uptrend; the five-year decline in number of college graduates is not only checked, but will start up in 1956.

4. The proportion of women in the total college enrollment has been steadily increasing for the past five years, and women comprise three-fourths of the elementary and secondary school staffs.

5. Since 1948 there has been a steady increase in the percent of all college graduates who were prepared to teach; in 1949 it was 21 percent, in 1955 it was 30.2 percent.

6. The percent of undergraduate students enrolled in teacher-preparation programs is in a consistent uptrend.

7. Standards for admission to teaching are being improved in many of the states.

These favorable factors will not, in themselves, eliminate the teacher shortage. They do, however, point the way to fruitful action. If the momentum generated by the increased concern of citizens throughout the nation can be sustained, and if wise leadership can channel this momentum into positive action, there is reason to be optimistic about the possibility of not only continuing educational services at their present level, but of steady improvement in both the quality and the supply of teaching personnel.

If long-range plans are developed and vigorously pursued, there is reason to anticipate a balance between supply and demand within a decade. This goal can be achieved without education claiming an unfair share of the total manpower resources of the nation. It can be achieved, too, within an administrative structure that will afford every child a fair opportunity. And it can be done without imposing impossibly heavy loads upon individual teachers.

What steps lead toward achievement of this goal? And who carries the responsibility for leadership and action? The following five major lines of attack are suggested:

1. Teaching, as an occupation, must be put on a competitive level commensurate with its requirements; i.e., salaries must be sufficient to attract and to hold the type of person with the quality of preparation desired. This step calls for much more vigorous action by school boards and administrators charged with the formulation of local budgets. In turn, they need much more insistent support by organized groups of citizens—P-TA, professional organizations, civic clubs. Most of all is needed the out-spoken support of business and industrial leaders, groups and individuals — actively calling for increased local levies, removal of antiquated bonding limitations, passage

of bond proposals, approval of building plans, equalization of assessments, statewide foundation programs, and enlarged support of the higher education institutions which produce teachers.

Just now there is a gratifying concern being shown by a particular segment of our society in one phase of education—industralists interested in the production of scientists and engineers. Special effort to support and to stimulate interest in this phase of the educational program is encouraging, if it is not achieved at the expense of other phases of education just as essential to the entire nation. But special measures should not cause us to lose sight of the overriding need—the fundamental issue—to bring the whole teaching profession to a higher level of appeal to talented youth. To subsidize one group is to strike at the morale of teachers in all other fields.

2. A larger number of the *most capable* youth must be identified and encouraged to prepare themselves for the more complex, involved tasks of our society. This does not mean an indiscriminate increase in college enrollments. It does mean an increased focus upon the top 25 per cent of all high school graduates, only one-half of whom now graduate from college. It is here that the greatest loss of the most needed manpower occurs. All professions, including teaching, would profit enormously by an improved program of guidance which would first identify and then motivate each youth to prepare himself for the fullest use of his capabilities. Here the primary responsibility of school administration and of all teachers is clear. They are in a key position to identify talent and to counsel in the planning of further education.

3. The program of preparation for teaching must be continuously strengthened. Discriminating students choose college programs because they recognize the functional nature of the instruction and because they can see how it will contribute to their later success. The institutions which prepare teachers have not been supported in accordance with the vital nature of their task. Their staffs are less well prepared and less well paid than the staffs of many other colleges. The ability of these institutions to attract and to hold students of quality is a meaningful factor in relieving the shortage of teachers.

4. A more realistic appeal must be made to the liberal arts and other college gradautes who did not take undergraduate preparation for teaching. Many thousands of them have fine talents for teaching, and many discover their interests only after college graduation. Many of them become available after temporary work in other occupations, military service, or full-time housekeeping activities. These people require special examination and counseling, particularly to prevent misfits gaining admission to teaching, and then an appropriate program of professional preparation should be made available to them. They should not be expected to enter undergraduate classes with immature, inexperienced youth.

In any and every program designed for these mature people, the educational welfare of the children to be taught, not the convenience of prospective teachers, should dictate the procedures followed and the standards maintained. These three qualities are minimal: desirable personality traits, a sincere willingness to strengthen areas of weakness in the general education background, and an honest readiness to acquire the professional skills and understandings necessary to success in teaching.

5. One of the most effective ways to meet the teacher shortage is to decrease

the annual demand for replacement of the teachers who quit. Next September some 85,000 now in service will not be in the classrooms. Many of those who quit will be among the best, and in the fields of greatest shortage. It is realistic to believe that this staggering annual loss can be cut in half. Every superintendent and every school board should be commended for conducting a continuous study of why teachers leave the profession. Improvement of standards of admission to teaching is one imperative step. This must go forward on a statewide basis, but each locality has an inescapable responsibility; most of the vital remedies must be found and applied in the local district. The sheer financial loss in the existing routine—recruiting, preparing, inducting into service, then quickly forfeiting the fruits of these costly efforts—is scarcely equaled anywhere in American occupational life. In truth, increased efforts to retain good teachers can strike a telling blow at the teacher shortage.

Part I—Supply of Teachers

The supply of teachers comes from a number of sources. In only one instance, however, can the number to become newly available at the beginning of a school year be accurately counted. Also, this is the only source of supply in which the preparation of each member of the group can be indicated. This group is made up of the members of a graduating class who, at the time of graduation, will have completed the requirements for the standard teaching certificates according to the regulations of the state in which the college is located.[1]

Other sources of supply are, of course, drawn upon. Included are:

1. Qualified former teachers.
2. Qualified graduates of former years who did not enter teaching after graduation.
3. College graduates with no, or inadequate professional preparation.
4. Others whose qualifications are in various stages of adequacy.

The investigator of the supply and demand problem is confronted with an impossible task if he seeks to determine, before the opening of a school year, how many from these four groups will actually become candidates for teaching positions. And even more Herculean would be the task of determining the number within each or any one of these groups.

The number of qualified former teachers is known to be large. Some 85,000 elementary and high school teachers quit the classroom each year, and many, but an unknown number in this group, are among the most competent and comprehensively prepared. The decision to return to teaching is a personal matter in every case, and thus the number this group will yield at the beginning of a school year is, and must remain problematical.

The second group mentioned above also holds large, but immeasurable potential. All of these persons had more than a passing interest in teaching, as indicated by their voluntary choice of the college courses required for the

[1]For a specific statement of the requirements for each type of certificate issued by each state, see W. Earl Armstrong and T. M. Stinnett, *A Manual on Certification Requirements for School Personnel in The United States*, published by the National Commission on Teacher Education and Professional Standards and for sale by the National Education Association.

standard certificate. Recent investigations indicate that this group consists of about one-third of the total number of new eligible candidates to come from the colleges each year.

Thus, over a period of years, there would accumulate in the general population a substantial reservoir of really qualified persons—former teachers and qualified graduates of earlier years who did not choose to enter teaching. Surely these combined groups comprise the first reserve to which the employing officer turns if the current crop of college graduates does not yield a sufficiently large number of available applicants. Surely, also, the members of this combined group who, due to changed circumstances, seek teaching positions, cannot and must not be arbitrarily classified as substandard. Much more must be learned, through investigations yet to be developed, about (1) the number of teachers drawn from this combined group, (2) the nature of their qualifications for the specific teaching assignments they accept, and (3) the changed conditions which caused them to return to teaching or to enter it for the first time. The impact of these persons upon the supply-demand problem is yet to be assessed. In particular, however, their contribution to the steady improvement in the qualifications of the nationwide corps of elementary school teachers (as portrayed in Part III of this report) should be unhesitantly recognized.

The Current Supply of Teachers

Through this annual national investigation a growing body of information becomes available concerning the most recent class of college graduates and the class that will graduate at the end of the on-going year. This is, is reality, the only source of teacher supply that is susceptible of measurement, both in quantity and in qualifications.[2]

The supply data are presented in Tables 1, 2, 3, 4, and 5. Table 1 shows the 1955 class, by field of preparation, and the 1956 class by sex and by field of preparation. Table 2 shows both groups, state by state, with the net change from 1955 to 1956. Table 3 presents a six-year summary, field by field, of those prepared to teach in high school, as well as those prepared at the degree level for elementary school teaching.

Tables 4 and 5 present the findings of a new study; members of the 1955 class are shown according to the type and accreditation of the institution from which they graduated.

A Break in the Downtrend

Table 1 shows that the 1956 class will include 38,731 new potential elementary school teachers—5,192 men and 33,539 women who are now completing the full four-year program of preparation. This total is up 2.7 per cent from the 37,712 members of the class of 1955. While this slender increase is not at all commensurate with the increase in enrollments due to hit the elementary schools next September, it is a positive sign—a vote of confidence by nearly 40,000 college graduates who believe that efforts will be continued across the nation to improve the status of the elementary school teacher.

Table 1 shows that the 1956 class will include 57,348 new potential high school teachers—30,195 men and 27,153 women. This total is up 15.4 per cent from the 49,697 members of the class of 1955. Not only is this general in-

(*Continued on page* 41)

[2]This comprehensive annual study is made possible only by the cooperative professional service of each of the 48 state departments of education, and their counterparts in Alaska, District of Columbia, Hawaii, and Puerto Rico.

TABLE 1. — TOTAL NUMBER OF COLLEGE AND UNIVERSITY STUDENTS COMPLETING CERTIFICATE REQUIREMENTS, ACCORDING TO REGULATIONS OF EACH OF THE 48 STATES, ALASKA, DISTRICT OF COLUMBIA, HAWAII, AND PUERTO RICO, BY SEX, IN 1956, COMPARED TO THE NUMBER WHO MET SUCH REQUIREMENTS IN 1955.

Type of Preparation	1956			1955 to 1956		
	Men	Women	Total	1955 Total	Net Change	Per Cent Change
1	2	3	4	5	6	7
Elementary School Teaching:						
120 semester hours	5,192	33,539	38,731	37,712	+1,019	+ 2.70
90 semester hours	97	1,090	1,187	1,503	— 316	—21.02
60 semester hours	928	6,503	7,431	6,627	+ 804	+12.13
30 semester hours	191	1,523	1,714	1,749	— 35	— 2.00
Elementary Total	6,408	42,655	49,063	47,591	+1,472	+ 3.09
High School Teaching:						
Agriculture	1,577	2	1,579	1,430	+ 149	+10.42
Art	840	1,379	2,219	1,930	+ 289	+14.97
Commerce	2,132	3,412	5,544	4,434	+1,110	+25.03
English	1,871	4,053	5,924	5,507	+ 417	+ 7.57
Foreign Language	544	945	1,489	1,328	+ 161	+12.12
Home Economics	17	4,524	4,541	4,025	+ 516	+12.82
Industrial Arts	2,586	72	2,658	2,177	+ 481	+22.09
Journalism	44	73	117	100	+ 17	+17.00
Library Science	50	287	337	324	+ 13	+ 4.01
Mathematics	1,653	947	2,600	2,155	+ 445	+20.65
Music	2,275	2,550	4,825	4,499	+ 326	+ 7.25
Physical Education (Men)	5,633	.....	5,633	4,794	+ 839	+17.50
Physical Education (Women)	.....	2,773	2,773	2,496	+ 277	+11.10
General Science	1,568	553	2,121	1,788	+ 333	+18.62
Biology	1,038	509	1,547	1,295	+ 252	+19.46
Chemistry	426	112	538	482	+ 56	+11.62
Physics	182	46	228	189	+ 39	+20.63
Social Science	6,070	2,853	8,923	7,572	+1,351	+17.84
Speech	599	955	1,554	1,391	+ 163	+11.72
Other	1,090	1,108	2,198	1,781	+ 417	+23.41
High-School Total	30,195	27,153	57,348	49,697	+7,651	+15.40
GRAND TOTAL	36,603	69,808	106,411	97,288	+9,123	+ 9.38

To interpret Table 1, see EXPLANATORY COMMENTS on the opposite page.

Explanatory Comments on Table 1

1. For the fifth consecutive year this national report includes all institutions in which teachers are prepared in the 48 states, Alaska, District of Columbia, and Hawaii. This, the 1956 report, includes Puerto Rico for the first time. Puerto Rico contributes 333 elementary and 140 high school teachers, as shown in column 4.

2. The figures for the year just past (1955) are final, and thus accurate. The figures for the year yet to be completed (1956) must necessarily be affected by deaths, dropouts, failures, and incomplete accounting. Thus, Table 1 always carries reports for two years. Experience proves the report for the current year is highly dependable.

3. Ordinarily, each graduate with major preparation in a high school subject also has minor preparation equal to the certificate requirements in another field. Use of a two-axis table (such as is used in Part II), in which each graduate would be reported by both major and minor, is under consideration.

4. Students graduating with preparation in the comprehensive field of science are listed in "General Science" (1,728 in 1955 and 2,121 in 1956). Doubtless many of these graduates have completed full majors in biology *or* chemistry *or* physics, but each is counted only once. Thus, a physics major who also has the required preparation in both biology and chemistry to teach general science is listed in the latter field only. See Appendix A for states which report all science graduates in general science because of certification requirements.

5. Ordinarily, graduates prepared in such special fields as art, music, physical education, and speech are qualified to teach these subjects in both elementary and high school.

6. The number of graduates prepared to meet requirements in journalism and library science is not fully reflected in Table 1; many of them may have major preparation in other fields, and thus are reported there.

7. In Hawaii, all are gradautes of the required five-year program for both elementary and high school teachers.

8. In New York, although five years of preparation are required in the academic fields (e.g. English, languages, mathematics, science, and social studies) for the standard certificate, current practice is to report the four-year graduates also in Table 1.

9. In some states (e.g., Maryland) a major is offered in the junior high school core program. These graduates are listed under "other" in the tables.

10. Standard certificates for elementary school teaching are issued on less than four years of college preparation in a steadily diminishing number of states. Table 1 and Appendix A show the number of persons to become eligible at the 90-, 60-, and 30-semester-hour levels, but these persons are not included in any of the other tables in this report.

11. In many of the state departments a more detailed report of teacher supply than this national report is prepared by the official who collaborates in this annual national investigation. Such reports contribute to a fuller understanding of this complex problem. Inquiries should be addressed to the appropriate state officer.

TABLE 2.—TOTAL NUMBER OF COLLEGE AND UNIVERSITY DEGREE CANDIDATES, BY SEX AND BY STATE, WHO ARE COMPLETING CERTIFICATE REQUIREMENTS IN EACH STATE, IN 1956, AND NET CHANGE FROM 1955

(This table does not include students meeting certificate requirements at 90-, 60-, or 30-hour levels)

State	Prepared for Elementary School Teaching — Graduates of 1956			Total and Net Change		Prepared for High School Teaching — Graduates of 1956			Total and Net Change	
	Men	Women	Total	1955	1955 to 1956	Men	Women	Total	1955	1955 to 1956
1	2	3	4	5	6	7	8	9	10	11
Alabama	30	533	563	615	− 52	495	592	1,087	1,094	− 7
Alaska	3	4	7	7	0	8	4	12	12	0
Arizona	72	323	395	345	+ 50	232	104	336	231	+ 105
Arkansas	30	300	330	499	− 169	439	378	817	741	+ 76
California	695	3,469	4,164	4,157	+ 7	2,598	1,605	4,203	4,204	− 1
Colorado	67	465	532	744	− 212	691	419	1,110	1,037	+ 73
Connecticut	99	350	449	420	+ 29	223	248	471	368	+ 103
Delaware	5	56	61	40	+ 21	32	35	67	43	+ 24
District of Columbia	14	153	167	94	+ 73	87	109	196	182	+ 14
Florida	65	719	784	660	+ 124	536	373	909	700	+ 209
Georgia (White)	12	408	420	613	− 193	194	267	461	416	+ 45
Georgia (Negro)	41	287	328	534	− 206	143	134	277	220	+ 57
Hawaii	2	159	161	97	+ 64	11	42	53	50	+ 3
Idaho	18	92	110	99	+ 11	166	105	271	242	+ 29
Illinois	372	1,939	2,311	2,101	+ 210	1,504	1,328	2,832	2,456	+ 376
Indiana	74	726	800	702	+ 98	923	774	1,697	1,477	+ 220
Iowa	44	408	452	411	+ 41	725	619	1,344	1,211	+ 133
Kansas	64	462	526	573	− 47	619	496	1,115	955	+ 160
Kentucky	99	507	606	641	− 35	528	468	996	929	+ 67
Louisiana (White)	112	523	635	597	+ 38	477	478	955	745	+ 210
Louisiana (Negro)	86	567	653	629	+ 24	291	281	572	360	+ 212
Maine	49	123	172	172	0	138	111	249	229	+ 20
Maryland	47	382	429	361	+ 68	258	284	542	496	+ 46
Massachusetts	172	1,203	1,375	1,255	+ 120	556	725	1,281	1,186	+ 95
Michigan	299	1,841	2,140	1,904	+ 236	1,301	1,309	2,610	1,848	+ 762
Minnesota	74	625	699	610	+ 89	955	727	1,682	1,295	+ 387
Mississippi (White)	14	228	242	239	+ 3	376	422	798	705	+ 93
Mississippi (Negro)	30	100	130	122	+ 8	151	132	283	207	+ 76
Missouri	71	788	859	1,039	− 180	630	497	1,127	910	+ 217
Montana	29	72	101	109	− 8	183	120	303	281	+ 22
Nebraska	72	251	323	374	− 51	444	296	740	564	+ 176
Nevada	3	34	37	31	+ 6	36	52	88	46	+ 42
New Hampshire	16	94	110	86	+ 24	98	64	162	130	+ 32
New Jersey	63	492	555	561	− 6	300	349	649	632	+ 17
New Mexico	37	176	213	185	+ 28	203	106	309	287	+ 22
New York	609	3,830	4,439	3,955	+ 484	1,819	1,892	3,711	3,443	+ 268
North Carolina (White)	52	678	730	702	+ 28	512	756	1,268	1,213	+ 55
North Carolina (Negro)	96	488	584	543	+ 41	283	298	581	577	+ 4
North Dakota	13	66	79	79	0	249	166	415	334	+ 81
Ohio	124	1,325	1,449	1,173	+ 276	1,423	1,306	2,729	2,114	+ 615
Oklahoma	44	510	554	663	− 109	830	618	1,448	1,340	+ 108
Oregon	140	386	526	496	+ 30	327	284	611	464	+ 147
Pennsylvania	188	1,395	1,583	1,600	− 17	1,876	1,597	3,473	2,846	+ 627
Puerto Rico	110	238	348	333	+ 15	54	73	127	140	− 13
Rhode Island	3	96	99	83	+ 16	76	58	134	122	+ 12
South Carolina (White)	19	256	275	245	+ 30	223	384	607	573	+ 34
South Carolina (Negro)	34	315	349	437	− 88	219	179	398	295	+ 103
South Dakota	11	78	89	101	− 12	223	159	382	383	− 1
Tennessee	85	686	771	708	+ 63	890	955	1,845	1,575	+ 270
Texas	134	1,749	1,883	1,808	+ 75	2,097	2,116	4,213	3,852	+ 361
Utah	74	426	500	460	+ 40	303	217	520	454	+ 66
Vermont	32	105	137	126	+ 11	64	38	102	99	+ 3
Virginia (White)	8	379	387	340	+ 47	199	366	565	582	− 17
Virginia (Negro)	5	127	132	149	− 17	162	172	334	259	+ 75
Washington	216	552	768	784	− 16	558	355	913	656	+ 257
West Virginia (White)	51	246	297	312	− 15	357	284	641	558	+ 83
West Virginia (Negro)	4	31	35	45	− 10	54	49	103	106	− 3
Wisconsin	159	690	849	929	− 80	787	730	1,517	1,174	+ 343
Wyoming	1	28	29	15	+ 14	59	48	107	49	+ 58
TOTAL	5,192	33,539	38,731	37,712	+1,019	30,195	27,153	57,348	49,697	+7,651

crease encouraging; it occurs in every one of the high teaching fields. Of particular note is the increase of 18.6 per cent in general science, 19.5 per cent in biology, 11.6 per cent in chemistry, and 20.6 per cent in physics. The increase in all four science fields combined is 18.1 per cent, encouragingly greater than the 15.4 general increase in all high school fields combined. Encouraging, also, is the greater-than-average increase in mathematics, 20.7 per cent. The greatest increase, 25 per cent, is in commerce; then comes industrial arts, up 22.1 per cent. The meaning of these increases is tempered, of course, by the facts presented in Part IV of this report —the extent to which school employing officials can attract these new graduates into teaching, in the face of competition by other occupations.

Table 2 shows highly irregular progress among the states in improving the teacher supply. The class of 1956 will bring increases in the number prepared for elementary school teaching to 34 states and decreases to 18 states.[3] Those to gain most are New York, 484; Ohio, 276; Michigan, 236; Illinois, 210; Florida, 124; Massachusetts, 120. Those to lose most are Georgia, 399; Colorado, 212; Missouri, 180; Arkansas, 169; Oklahoma, 109.

Table 2 shows that the class of 1956 will bring increases in the number prepared for high school teaching to 47 states, no change in one, and losses in four. Those to gain most are Michigan, 762; Pennslyvania, 627; Ohio, 615; Louisiana, 422; Minnesota, 387; Illinois, 376; Texas, 371; Wisconsin, 343; Tennessee, 270; New York, 268. Those failing to gain are Alabama, Alaska, California, Puerto Rico, and South Dakota. In no instance, however, will the loss be considerable.

Table 3 presents a quick review of conditions, year by year since 1950. That was the year the number of college graduates reached an all-time high of 434,000. This total has fallen steadily until it reached 287,000—down 33.7 per cent—in 1955. The 1956 total cannot be determined until next fall, but it will show a slight increase from the 1955 bottom.

Within these successive graduating classes the number with preparation for teaching presents a curious picture. Potential high school teachers have decreased just 34 per cent in six years—from 87,000 in 1950 to 57,000 in 1956. At the same time the number of potential elementary school teachers (those who complete the full four-year program of preparation) has increased 35 per cent, from 29,000 in 1950 to 39,000 in 1956.

This paradox—an increase of one-third in the supply of qualified elementary school teachers while the total number of college graduates was decreasing by one-third—is an unparalleled happening. It becomes logical only when we recognize that during the past few years the concept of a broadly educated teacher in every elementary school classroom has steadily gained in public acceptance. True, salaries have improved and standards have been raised, but these are consequences, not causes of the growing appreciation of the role of the elementary school teacher.

Table 3 also shows an interesting picture of what has been happening within the group of college graduates prepared for high school teaching. As a whole, this group has decreased 34 per cent, but the *distribution of this decrease among the teaching fields* is cause for concern. The number of new art teach-

[3]The reader will recall that Alaska, District of Columbia, Hawaii, and Puerto Rico are included as units in this study.

TABLE 3.—TOTAL NUMBER OF COLLEGE GRADUATES; NUMBER PREPARED TO TEACH IN EACH HIGH SCHOOL FIELD; NUMBER PREPARED TO TEACH IN ELEMENTARY SCHOOL; PERCENT OF YEAR-BY-YEAR CHANGE, 1950-1956

(This table does not include students meeting certificate requirements at 90-, 60-, or 30-hour levels)

College Graduates	1950	1951	1952	1953	1954	1955	1956
1	2	3	4	5	6	7	8
Receiving bachelors' degrees	433,754	384,352	331,924	304,857	292,880	287,401	Not available
Percent change from 1950	____	−11.4%	−23.5%	−29.7%	−32.5%	−33.7%	____
Prepared to teach in high school:							
Majors in ART	2,225	2,296	2,249	2,019	1,856	1,930	2,219
Percent change from 1950	____	+ 3.2%	+ 1.1%	− 9.3%	−16.6%	−13.3%	− 0.3%
Majors in HOME ECONOMICS	4,899	4,640	4,648	4,282	4,212	4,025	4,541
Percent change from 1950	____	− 5.3%	− 5.1%	−12.6%	−14.0%	−17.8%	− 7.3%
Majors in MUSIC	5,296	4,652	4,882	4,641	4,323	4,499	4,825
Percent change from 1950	____	−12.2%	− 7.8%	−12.4%	−18.4%	−15.0%	− 8.9%
Majors in WOMEN'S PHYSICAL ED.	3,178	2,562	2,607	2,485	2,440	2,496	2,773
Percent change from 1950	____	−19.4%	−18.0%	−21.8%	−23.2%	−21.5%	−12.7%
Majors in COMMERCE	7,235	5,750	5,165	4,571	4,076	4,454	5,544
Percent change from 1950	____	−20.5%	−28.6%	−36.8%	−43.7%	−38.7%	−23.4%
Majors in FOREIGN LANGUAGE	2,193	2,133	1,859	1,519	1,368	1,328	1,489
Percent change from 1950	____	− 2.7%	−15.2%	−30.7%	−37.6%	−39.4%	−32.1%
Majors in SOCIAL SCIENCE	15,349	12,178	9,406	8,149	7,227	7,572	8,923
Percent change from 1950	____	−20.7%	−38.7%	−46.9%	−52.9%	−50.7%	−41.9%
Majors in MATHEMATICS	4,618	4,118	3,142	2,573	2,223	2,155	2,600
Percent change from 1950	____	−10.8%	−32.0%	−44.3%	−51.9%	−53.3%	−43.7%
Majors in ENGLISH	10,709	9,461	8,211	7,166	5,278	5,507	5,924
Percent change from 1950	____	−11.7%	−23.3%	−33.1%	−50.7%	−48.6%	−44.7%
Majors in INDUSTRIAL ARTS	4,890	4,284	3,161	2,570	2,201	2,177	2,658
Percent change from 1950	____	−12.4%	−35.4%	−47.4%	−55.0%	−55.5%	−45.6%
Majors in MEN'S PHYSICAL EDUCATION	10,614	8,179	6,546	5,416	4,854	4,794	5,633
Percent change from 1950	____	−22.9%	−38.3%	−49.0%	−54.5%	−54.8%	−46.9%
Majors in SCIENCE	9,096	7,507	5,246	4,381	3,641	3,754	4,434
Percent change from 1950	____	−17.5%	−40.3%	−51.8%	−60.0%	−58.7%	−51.3%
Majors in AGRICULTURE	3,294	2,404	1,891	1,601	1,541	1,430	1,579
Percent change from 1950	____	−27.0%	−42.6%	−51.4%	−53.2%	−56.6%	−52.1%
Total prepared to teach in high school	86,890	73,015	61,510	54,013	48,916	49,697	57,348
Percent change from 1950	____	−16.0%	−29.2%	−37.8%	−43.7%	−42.8%	−34.0%
Total prepared to teach in elementary school	28,587	33,782	37,649	37,430	36,885	37,712	38,731
Percent change from 1950	____	+18.2%	+31.7%	+30.9%	+29.0%	+31.9%	+35.5%
Grand total prepared to teach	115,477	106,797	99,159	91,443	85,801	87,409	96,079
Percent change from 1950	____	− 7.5%	−14.1%	−20.8%	−25.7%	−24.3%	−16.8%

ers in 1956 will be the same as in 1950; home economics teachers will be fewer by only 7.3 per cent; music teachers by 8.9 per cent; women's physical education, 12.7 per cent; commerce, 23.4 per cent; foreign languages, 32.1 per cent; social studies, 41.9 per cent; mathematics, 43.7 per cent; English, 44.7 per cent; industrial arts, 45.6 per cent; men's physical education, 46.9 per cent; science, 51.3 per cent; agriculture, 52.1 per cent.

The meaning of these decreases, field by field, becomes clear only when we answer the question, "How did the supply compare with the demand in 1950?" School administrators and college placement officers will recall that in 1950 the total supply (87,000) exceeded the demand (not more than 40,000). These three factors, however, must be considered:

1. Many of those graduates of 1950 did not seek teaching positions.

2. There was the greatest oversupply in men's physical education and social studies in 1950; in that year the supply in science and in mathematics was no more than equal to the demand.

3. Many of the 87,000 graduates of 1950 who were prepared for teaching

a specific high school subject were converted into elementary school teachers, thus materially supplementing the short supply in the latter field.

Since 1950 our national defense needs have greatly accelerated the development of those industries requiring the services of scientists and engineers; this has focused attention upon the sensational rate at which the supply of high school teachers of science and mathematics has diminished. Thus the facts shown in Table 3 emphasize, not the general shortage of high school teachers at this moment, but the mal-distribution of the total supply among the fields and subjects to be taught.

Tables 4 and 5 present a new body of data included in this national report for the first time. Members of the class of 1955 who prepared for teaching are shown according to (a) the type of institution, and (b) the accreditation of the institution from which they graduated. The institutions are grouped as (a) teachers colleges, (b) general colleges, and (c) universities. Each group is divided according to its control, public or non-public. The four levels of accreditation are (a) by the state only, (b) by the state and the appropriate regional association, (c) by the state and the National Council for Accreditation of Teacher Education, and (d) by all three agencies—state, regional association, and National Council.

As shown in Table 4, the class of 1955 included 37,712 bachelor's degree recipients who were prepared for elementary school teaching. Of this total, 23 per cent were produced by teachers colleges, 48.3 per cent by general colleges, and 28.7 per cent by universities. Publicly controlled institutions produced 68.2 per cent and non-publicly controlled institutions produced 31.8 per cent of this group. Institutions accredited only by the state department produced 3.3 per cent of these 37,712 new elementary school teachers; institutions accredited by the state and the regional association, 31.7 per cent; those accredited by the state and the National Council, 4.5 per cent; those accredited by all three agencies, 60.5 per cent.

As shown in Table 5, the class of 1955 included 49,697 graduates who were prepared for high school teaching. Of this total, 18.4 per cent were produced by teachers colleges; 42 per cent by general colleges, and 39.6 per cent by universities. Publicly controlled institutions produced 65.2 per cent and non-publicly controlled institutions produced 34.8 per cent of this group. Institutions accredited only by the state department produced 2.3 per cent of these 49,697 new high school teachers; institutions accredited by the state and the regional association, 37 per cent; those accredited by the state and the National Council, 1.8 per cent; those accredited by all three agencies, 58.9 per cent.

When those prepared for elementary and those prepared for high school teaching are combined, the total is 87,409 members of the class of 1955. Teachers colleges produced 20.3 per cent; general colleges, 44.8 per cent; universities, 34.9 per cent. Publicly controlled institutions produced 66.5 per cent; non-publicly controlled institutions, 33.5 per cent. Institutions accredited only by state departments of education produced 2.7 per cent of these 87,409 new elementary and high school teachers; institutions accredited by the state and regional association, 34.7 per cent; those accredited by the state and the National Council, 3.0 per cent; those accredited by all three agencies, 59.6 per cent. Publicly controlled institutions produced 66.5 per cent of the combined total; non-publicly controlled, 33.5 per cent.

TABLE 4.—TOTAL NUMBER OF GRADUATES OF 1955 IN THE 48 STATES, ALASKA, DISTRICT OF COLUMBIA, HAWAII, AND PUERTO RICO WHO MET STANDARD CERTIFICATE REQUIREMENTS TO TEACH IN ELEMENTARY SCHOOLS, ACCORDING TO THE ACCREDITATION AND THE TYPE OF INSTITUTION FROM WHICH THEY GRADUATED

(This Table Does Not Include Students Meeting Certificate Requirements at 90-, 60-, or 30-Hour Levels)

	Number and percent of 1955 graduates prepared by											
	Teachers Colleges[1]			General Colleges[2]			Universities[3]			Total		
Accredited by	Public	Non-Public	Total	Public	Non-Public	Total	Public	Non-Public	Total	Public	Non-Public	Total
1	2	3	4	5	6	7	8	9	10	11	12	13
State Board or Department only:												
Number	307	119	426	29	577	606	61	131	192	397	827	1,224
Percent of grand total	0.9%	0.3%	1.2%	0.1%	1.5%	1.6%	0.1%	0.4%	0.5%	1.1%	2.2%	3.3%
State and Regional Association:												
Number	88	69	157	2,916	5,470	8,386	2,007	1,413	3,420	5,011	6,952	11,963
Percent of grand total	0.2%	0.2%	0.4%	7.7%	14.5%	22.2%	5.3%	3.8%	9.1%	13.2%	18.5%	31.7%
State and National Council:[4]												
Number	973	0	973	508	10	518	213	0	213	1,694	10	1,704
Percent of grand total	2.6%	0.0%	2.6%	1.3%	*	1.3%	0.6%	0.0%	0.6%	4.5%	*	4.5%
State and Regional Association and National Council:[4]												
Number	6,662	442	7,104	6,476	2,265	8,741	5,497	1,479	6,976	18,635	4,186	22,821
Percent of grand total	17.6%	1.2%	18.8%	17.2%	6.0%	23.2%	14.6%	3.9%	18.5%	49.4%	11.1%	60.5%
Total:												
Number	8,030	630	8,660	9,929	8,322	18,251	7,778	3,023	10,801	25,737	11,975	37,712
Percent of grand total	21.3%	1.7%	23.0%	26.3%	22.0%	48.3%	20.6%	8.1%	28.7%	68.2%	31.8%	100.0%

[1]In this group are included only those institutions legally designated as a "teachers college" or a "college of education." [2]In this group are the state colleges and the liberal arts colleges. It is recognized that many of the state colleges offer graduate work to the master's degree level, as do also some of the teachers colleges. [3]In this group are the multiple-unit institutions, incuding many land-grant colleges. The determining factor is not the title of the institution, but the existence of colleges or schools under the administration of a dean. [4]National Council for Accreditation of Teacher Education. *Less than 1/10 of one per cent.

TABLE 5.—TOTAL NUMBER OF GRADUATES OF 1955 IN THE 48 STATES, ALASKA, DISTRICT OF COLUMBIA, HAWAII, AND PUERTO RICO WHO MET STANDARD CERTIFICATE REQUIREMENTS TO TEACH IN HIGH SCHOOL, ACCORDING TO THE ACCREDITATION AND THE TYPE OF THE INSTITUTION FROM WHICH THEY GRADUATED

Accredited by	Number and percent of 1955 graduates prepared by: Teachers Colleges[a] Public	Teachers Colleges[a] Non-Public	Teachers Colleges[a] Total	General Colleges[b] Public	General Colleges[b] Non-Public	General Colleges[b] Total	Universities[c] Public	Universities[c] Non-Public	Universities[c] Total	Total Public	Total Non-Public	Total Total
1	2	3	4	5	6	7	8	9	10	11	12	13
State Board or Department only:												
Number	0	2	2	141	854	995	41	120	161	182	976	1,158
Percent of grand total	0.0%	•	•	0.2%	1.8%	2.0%	0.1%	0.2%	0.3%	0.3%	2.0%	2.3%
State and Regional Association:												
Number	250	23	273	2,586	8,569	11,155	4,602	2,338	6,940	7,438	10,930	18,368
Percent of grand total	0.5%	0.1%	0.6%	5.2%	17.2%	22.4%	9.3%	4.7%	14.0%	15.0%	22.0%	37.0%
State and National Council:[d]												
Number	202	0	202	372	18	390	313	0	313	887	18	905
Percent of grand total	0.4%	0.0%	0.4%	0.8%	•	0.8%	0.6%	0.0%	0.6%	1.8%	•	1.8%
State and Regional Association and National Council:[d]												
Number	7,712	948	8,660	6,085	2,249	8,334	10,110	2,162	12,272	23,907	5,359	29,266
Percent of grand total	15.5%	1.9%	17.4%	12.3%	4.5%	16.8%	20.3%	4.4%	24.7%	48.1%	10.8%	58.9%
Total:												
Number	8,164	973	9,137	9,184	11,690	20,874	15,066	4,620	19,686	32,414	17,283	49,697
Percent of grand total	16.4%	2.0%	18.4%	18.5%	23.5%	42.0%	30.3%	9.3%	39.6%	65.2%	34.8%	100.0%

[a], [b], [c], [d], and • See footnotes at the bottom of Table 4.

Part II—Demand for Teachers

The demand for teachers may be considered in two ways. First, we may ask the question, "How many teachers would be needed to enable the elementary and high schools of the nation to provide a fair educational opportunity for every boy and girl, according to the capabilities of each?" Second, we may ask, "How many new teachers were in demand last September, as indicated by the number who were employed?" A sound answer to the former would be enlightening even if it should be materially higher than the answer to the second. Indeed, the difference between these two answers would be a fair measure of the unmet needs of the American elementary and secondary school system.

A reasonably accurate answer can be found for each of these questions. The first—the number needed—must be viewed in these five categories:

1. The numbers needed to replace those who leave classroom service.

2. The number needed to accommodate the increased enrollment.

3. The number needed to relieve excessive overcrowding and to eliminate half-day sessions.

4. The number needed to offer essential instruction and educational services not now provided.

5. The number needed to replace the unqualified persons now serving as teachers.

From this total may be substracted:

1. The economies achieved through consolidation of districts in which teachers serve small numbers of pupils.

2. The results of efforts to upgrade inadequately prepared teachers while they continue in service.

3. The savings in professional personnel through greater use of assistants to perform clerical and other routine duties.

There is reason to believe that the number now in service who will quit at the end of the 1955-56 school year will approximate 85,000. With an increase of more than one million in enrollment next September, a minimum of 35,000 teachers should be added. If just a reasonable effort is made to relieve overcrowding and cut down the number of pupils on half-day schedules at least 20,000 should be added. If no more than 10,000 were added to expand the educational program in neglected areas, and if no more than 40,000 of the most woefully unprepared teachers replaced, this total need next September would be 190,000. An estimate (no concise measurement is possible) of possible savings in teacher personnel through the channels described above should not be more than 15,000. This means, then, that there is a realistic need (demand) for 175,000 qualified teachers to be available to the elementary and high schools in September 1956. In Part I of this report the total number of qualified members of the 1956 class of college graduates was shown to be 96,079. This means that if all members of the class of 1956 should take teaching positions (see Part IV of this report) the deficit would be approximately 80,000. At this moment the question is fourfold: (1) How many of the qualified members of the 1956 class will enter teaching? (2) How many of the qualified members of the earlier graduating classes—former teachers and others—will come from the general population? (3) How many positions will be filled by persons without minimum qualifications? (4) How many of next year's needs will remain unmet?

TABLE 6.--DEMAND FOR TEACHERS IN SEPTEMBER, 1955, IN 29 STATES, THE DISTRICT OF COLUMBIA, HAWAII, AND PUERTO RICO, AND THE SUPPLY PRODUCED BY COLLEGES IN THE SAME AREAS IN 1954-55

Based on reports from: Alabama, Arizona, Colorado, Connecticut, Delaware, District of Columbia, Illinois, Indiana, Kansas, Kentucky, Maryland, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, Ohio, Oklahoma, Oregon, South Carolina, South Dakota, Tennessee, Utah, Vermont, Virginia, Washington, Wisconsin, Wyoming, Hawaii, and Puerto Rico

This table shows the number of persons who entered teaching positions in September, 1955, who did not teach anywhere in 1954-55. Lines 1-21 show new high school teachers. The major assignment is tallied on the line and the minor assignment in the column. Line 22 shows new elementary-school teachers. The column at the extreme right shows the supply of degree graduates produced in 1954 by colleges in these areas. No person is counted twice.

MAJOR ASSIGNMENT	STATE	MINOR ASSIGNMENT																					
	1955-56	AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
	AGRICULTURE	368			4			19			9	3	1		34	41	19	4	7		8	517	688
	ART	1	448	13	38	2	1	4	1	2	10	12	4	2	7				24	1	5	575	736
	COMMERCE	11	8	1541	99	12	7	13	23	7	37	13	24	22	18	3	2		92	6	16	1954	2188
	ENGLISH	9	15	53	2294	291	21	3	80	80	51	63	9	51	51	8	1	1	562	156	47	3846	2591
	FOREIGN LANGUAGE		1	2	140	323	1		1	2	7	1	2	2	3	2	3		64	2	5	561	667
	HOME ECONOMICS	48	8	13	49	9	1388		3	6	13	3		70	77	28	19	6	27		17	1784	2004
	INDUSTRIAL ARTS	2	6	3	8			770			52	1	60	6	18	12	7	4	39		23	1011	1098
	JOURNALISM			1	18	3	1		31	1									2	1		58	33
	LIBRARY SCIENCE	2		3	46	4	1	1	1	294	6	1		1	1		1		19	1	7	389	145
	MATHEMATICS	10	3	18	57	5	1	26		3	1168	14	56	14	280	31	58	54	103	1	17	1919	1047
	MUSIC	6	23	9	76	7	2				13	1344	7	10	13	6	3		61	4	12	1596	1992
	PHYS. ED.—MEN	8	1	7	10	2		14			36		813	25	62	65	6	6	159	1	30	1245	2251
	PHYS. ED.—WOMEN	5	1	7	38	3	6	1	1	5	10	4	8	670	32	16	2	5	51	4	9	878	1237
	GENERAL SCIENCE	12	4	2	35	1	17	6		4	246	4	74	18	805	68	31	23	79	2	16	1447	696
	BIOLOGY	7	1	3	13	2	7	3		1	25		23	18	54	303	40	16	28		6	550	814
	CHEMISTRY	2	1	2		2	1		1		21	1	6	1	19	55	178	22	9		2	323	290
	PHYSICS	1			3		1	1			18		1	1	18	6	17	126	7		1	201	100
	SOCIAL STUDIES	15	5	28	267	45	8	10	4	14	66	13	164	24	60	18	2	5	1687	21	66	2522	3682
	SPEECH		1	2	39	1			4	3	1	1							18	182	3	255	588
	OTHER	6	3	3	29	7	3	4		3	29	5	7	7	12	1	1	2	30	3	1152	1307	636
	HIGH SCHOOL TOTAL																					22998	23483
	ELEMENTARY SCHOOL TOTAL																					35319	16761

The other way to consider the demand for teachers is to look at what happened in preparation for the opening of the 1955-56 school year, i.e., how many new teachers were employed last September through the use of all funds available to employ teachers? In other words, how much of the educationally realistic demand was met?

Table 6 shows the exact number of new teachers[1] employed last September in 29 states, the District of Columbia, Hawaii, and Puerto Rico. The total is 22,938 high school and 33,319 elementary school teachers. Each new high school teacher is entered on Table 6 according to his teaching assignments. He is shown to be teaching exclusively in one field or to be devoting a major portion of his time to one field and a minor portion to another.

In four other states—California, Mississippi, New Jersey, and Texas — the total number of new teachers was accurately reported but it was not possible to describe their teaching assignments in the detail required to enter them in the proper places in Table 6.[2] The totals may properly be combined, however, and they then read as follows: new teachers in 33 states, the District of Columbia, Hawaii, and Puerto Rico

Elementary — 50,764
High school — 32,458

In these same areas there are in service 486,152 elementary school teachers, or 66.5 per cent of the total elementary school corps of 731,368. In these same areas there are in service 245,975 high school teachers, or 59.7 per cent of the total corps of 412,138. If the reported new teachers employed last September are representative of those employed throughout the nation it may be assumed that the total number of elementary school teachers employed last September is 76,337, and the total number of new high school teachers is 54,369—a grand total of 130,706.

Table 6 contains some, but not all of the information needed to gain a full understanding of the manner and the extent to which the 1955-56 demand was met. Reports from all states are needed, so that we may see the exact nature, as well as the total number of positions filled by new teachers. Only then can we begin to conduct an accurate study of the sources and qualifications of these new teachers.

We know, of course, approximately how many new teachers came from the most recent class of college graduates. But we do not know: (1) how many fully qualified former teachers have returned; (2) how many qualified graduates of earlier years entered teaching for the first time; (3) how many liberal arts graduates (of the current and earlier years) entered teaching; (4) what amount and quality of post-graduate preparation preceded the entry of liberal arts gradautes into teaching; (5) what motives prompted former teachers and other graduates of earlier years to seek teaching positions; (6) to what extent the preparation of a new teacher coincides with the specific teaching assignment; (7) the recency of the training or teaching experience of the new teacher; or (8) the likelihood that the new teacher's service will be terminated by removal of the family to accommodate another member.

The foregoing items only point up the problem; demand for teachers can be fully understood only after many facts are brought to light.

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[1]A "new" teacher is one who was not employed as a teacher anywhere the preceding year. The teacher who changes positions is not considered as having met a demand for a teacher, and thus is not included here.

[2]See Appendix B for state-by-state reports of the demand for teachers in 1955-56.

Part III—Analysis of the Preparation of Elementary School Teachers

What are the identifiable characteristics of a competent teacher? How can such a teacher be described? The impossibility of a completely defensible answer is obvious, but the quest for the best answer continues. Our frustration is mitigated only by the fact that it is equally impossible to delineate the essential qualities of a competent engineer, dentist, nurse, doctor, minister, or pharmacist.

Long ago we accepted the idea that practitioners in the various professions should be required to obtain a license, or legal permit, before offering their services to the public. Regulations governing the issuance of the license vary from one profession to another, but they have one element in common: uniformly they stipulate the minimum requirements of formal education, both general and specific. On this one qualification there is broad agreement.

If we ask the question, "What is the level of competence of a state-wide corps of teachers?", we find ourselves under severe limitations. We know that many elements should be considered, but the only one which lends itself to rather concise, objective measurement is formal preparation expressed in semester hours of college credit, and in the distribution of these credits among the pertinent fields of study. Thus the whole fabric of certificate regulations rests upon this method of presuming to measure competence.[1]

For some decades the commonly accepted requirement for high school teaching has been the bachelor's degree. Some states and many local districts have pushed this requirement forward to the master's degree level. But for elementary school teaching the need for comprehensive preparation is only now gaining widespread acceptance.

Licenses have been, and continue to be issued on a multitude of bases. It is extremely difficult, if not impossible, to interpret the meaning of a teaching certificate by its title. Thus one part of this annual study is directed to the examination of the competence of elementary school teachers on the basis of the total number of college credits they have earned. Despite its obvious limitations, this criterion is a broad measure of the effort of a state to provide an adequate elementary school program.

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[1]Of course the states also impose requirements concerning such items as age, health, and citizenship, but these are subordinate to the major criterion of formal preparation.

TABLE 7.—PREPARATION OF ALL ELEMENTARY SCHOOL TEACHERS IN CERTAIN STATES, INDICATED IN SEMESTER HOURS OF CREDIT, ANNUALLY SINCE 1949

Year	Number of states participating[a]	120 or More Hrs.		60-119 Hrs.		Less Than 60 Hrs.		Total	
		No. of Teachers	Per Cent of Total	No. of Teachers	Per Cent of Total	No. of Teachers	Per Cent of Total	No. of Teachers	Per Cent of Total
1	2	3	4	5	6	7	8	9	10
1949	23	108,827	49.07%	75,453	34.02%	37,507	16.91%	221,787	100.00%
1950	37	156,768	46.71	122,734	36.57	56,117	16.72	335,619	100.00
1951	39	184,307	48.85	133,430	35.36	59,594	15.79	377,331	100.00
1952	36	201,731	54.65	123,428	33.44	43,987	11.91	369,146	100.00
1953	30	209,176	60.44	108,068	31.23	28,848	8.33	346,092	100.00
1954	35	281,476	64.72	124,789	28.70	28,629	6.58	434,894	100.00
1955	32	316,775	67.62	123,018	26.26	28,652	6.12	468,445	100.00
1956	34	331,508	69.33	119,257	24.95	27,340	5.72	478,105	100.00

[a]Not exactly the same states participated each year. Several state offices cannot complete this study until the close of the academic year. The list of states participating in this part of the study each year is shown in the Annual National Teacher Supply and Demand Report for that year.

TABLE 8.—PREPARATION OF ALL ELEMENTARY SCHOOL TEACHERS IN 11 STATES AND THE DISTRICT OF COLUMBIA, INDICATED IN SEMESTER HOURS OF CREDIT, ANNUALLY SINCE 1949[a]

Year	120 or More Hrs.		60-119 Hrs.		Less Than 60 Hrs.		Total	
	No. of Teachers	Per Cent of Total	No. of Teachers	Per Cent of Total	No. of Teachers	Per Cent of Total	No. of Teachers	Per Cent of Total
1	2	3	4	5	6	7	8	9
1949	59,062	45.97%	48,178	37.50%	21,241	16.53%	128,481	100.00%
1950	62,298	48.75	44,765	35.03	20,732	16.22	127,795	100.00
1951	73,974	55.00	44,937	33.41	15,595	11.59	134,506	100.00
1952	79,104	57.65	45,471	33.14	12,636	9.21	137,211	100.00
1953	85,019	61.23	44,175	31.81	9,668	6.96	138,862	100.00
1954	92,129	63.61	44,982	31.06	7,729	5.33	144,840	100.00
1955	100,194	65.72	45,511	29.85	6,761	4.43	152,466	100.00
1946	107,584	67.73	45,125	28.41	6,126	3.86	158,835	100.00

[a]States submitting complete reports each year: Alabama, Arizona, Connecticut, District of Columbia, Kansas, Kentucky, Missouri, North Carolina, Ohio, Utah, Vermont, and Wisconsin.

Tables 7, 8, and 9 contain clear evidence that (1) steady progress is being made in upgrading the entire elementary school staff, and (2) tremendous differences are found among the states.

Table 7 summarizes the reports from a varying number of states, year by year since 1949, when the first study was undertaken. In 1949 there were 221,787 elementary school teachers in the 23 reporting states. Just under one-half (49.1 per cent) of them were college graduates, and almost 17 per cent had completed less than two years of college work. In 1956, in the 34 reporting states there are 478,105 elementary school teachers in service, of whom 69.3 per cent are college graduates and only 5.7 per cent are below the two-year level of preparation.

Table 8 presents a sharper picture of progress—the record in the states which have made a complete study each year since 1949. During this period the number of elementary school teachers in these states has increased from 128,481 to 158,835. In 1949 only 46 per cent were college graduates; in 1956 no less than 67.7 per cent are at this level. In 1949 some 16.5 per cent had completed less than two years of college; in 1956 only 3.9 per cent are in this group.

Table 9 presents a state-by-state view of the present situation. It indicates in broad terms the quality of the elementary school program in 34 states (and D. C., Alaska, Hawaii, and Puerto Rico) as reflected in the preparation of the teaching staff. At the one extreme is the state with a college graduate in practically every elementary school classroom; at the other extreme is the state with scarcely one-fourth of its classrooms staffed by teachers with such qualifications. Viewed another way, some states have no elementary school teachers with less than two years of college preparation, while other states entrust well over one-half of their classrooms to teachers with such meager preparation.

Table 9 presents another view of the national situation. In 26 states (and D. C., Alaska, Hawaii, and Puerto Rico) it was possible to make a separate classification of the new elementary school teachers employed last September according to their preparation. This additional information shows that in most of the states the group of new teachers tends to pull up the general level of preparation of the whole staff. In some states, however, the new teachers pull down the standard.

Part IV—Occupations of College Graduates Prepared to Teach

The truth of the old saying that the proof of the pudding is in the eating is well demonstrated in a study of what happens, vocationally, to a class of college graduates who have just completed four-year courses in preparation for teaching. In other words, how successful are the employers of teachers in inducing these newly qualified persons to accept teaching positions in the face of other competition for their services?

Each college was also asked to report the occupation, on November 1, 1955, of this new group of eligible candidates for teaching. Not all colleges could do so, since some of them have not yet established follow-up services by which they retain contact with their graduates. Interest in this question is growing rapidly, however, and thus the following report is more nearly representative of the nation-wide situation than was the report a year ago. This report is based on information from all of the colleges in 26 states (and Alaska and Hawaii) and from a majority of the colleges in 14 states (and D. C. and Puerto Rico). It covers 77 per cent of the 37,712 eligible elementary school teachers and 72.3 per cent of the 49,697 eligible high school teachers in the class of 1955. The manner in which these most recent college graduates distributed themselves occupationally may therefore be regarded as typical.

Table 10 contains enlightening if not encouraging information. It shows that the loss in this new group of eligible elementary school teachers is about one in five, and that the loss of eligible high school teachers is a little more than one in three.

Of the elementary school men, 74.6 entered teaching; of the elementary school women, 82.7 entered teaching, for a combined percentage of 81.6, compared with 78.9 per cent last year.

Of the high school men, 57.8 per cent entered teaching; of the high school women, 68.5 entered teaching, for a combined percentage of 62.9. This compares with 55.7 per cent reported a year ago. The grand total (elementary and high school combined) is 71.3 per cent, compared with 65.8 last year.

Table 10 shows that in some high school teaching fields more than two-thirds of the newly qualified graduates entered teaching, while in other fields scarcely one-half of them did so. The teaching field most successful in attracting members of the class of 1955 is English, with 69.4 per cent. Then comes music, with 68.8 per cent; third is mathematics, with 67.3 per cent; fourth is art, with 65.9 per cent. At the other end of the scale is agriculture, which attracted only 44.6 of this new group. Other fields below the average are chemistry, 46.6 per cent; biology, 55 per cent; physics, 56.9 per cent.[1] When all of those prepared to teach science are combined (general science, biology, chemistry, and physics) only 56.4 per cent were reported to be teaching.

These figures take on added meaning when they are compared with the figures shown in Table 3. For example, the latter table shows that the number of college graduates prepared to teach

(*Continued on page* 56)

[1]The fields of journalism and library science are not included in these comparisons because their numbers are small.

TABLE 9—ANALYSIS OF PREPARATION, IN SEMESTER HOURS OF CREDIT, OF ELEMENTARY SCHOOL TEACHERS IN 34 STATES, ALASKA, HAWAII, PUERTO RICO, AND DISTRICT OF COLUMBIA IN 1955-56

Wherever possible, the elementary school teachers in service in a state are divided into seven groups, as shown in the seven column headings of this table. In some of the participating states it was only possible to divide the teachers into three broader groups. The totals, therefore, are shown in only these three groups: teachers having 120 or more semester hours of college credit; teachers having 60 but not more than 119 semester hours; teachers having less than 60 semester hours.

In 26 states, Alaska, Hawaii, Puerto Rico, and the District of Columbia it was possible to make a separate analysis of the preparation of all new elementary school teachers entering service in September, 1955. These reports are shown in separate lines in *italics*. They provide a quick method of determining whether the new group improves or pulls down the average preparation of all elementary school teachers in service in that state. These new teachers are included in the state total shown in the preceding line; they are not added twice in the grand total.

State	150 or More Hrs.		120-149 Hrs.		90-119 Hrs.		60-89 Hrs.		30-59 Hrs.		1-29 Hrs.		No Hrs.		Total	
	No. of Teachers	Per Cent of Total	No. of Teachers	Per Cent of Total	No. of Teachers	Per Cent of Total	No. of Teachers	Per Cent of Total	No. of Teachers	Per Cent of Total	No. of Teachers	Per Cent of Total	No. of Teachers	Per Cent of Total	No. of Teachers	Per Cent of Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Alabama	1,033	7.1%	9,620	66.2%	1,484	10.2%	1,448	9.9%	945	6.6%	0	0.0%	0	0.0%	14,530	100.0%
Alabama (New in 1955-56)	*37*	*3.9*	*653*	*69.2*	*92*	*9.7*	*91*	*9.6*	*70*	*7.6*	*0*	*0.0*	*0*	*0.0*	*943*	*100.0*
Alaska	78	8.1	721	74.7	114	11.8	36	3.7	9	1.0	6	0.6	*1*	*0.1*	965	100.0
Alaska (New in 1955-56)	*9*	*8.9*	*78*	*77.2*	*9*	*8.9*	*2*	*2.0*	*2*	*2.0*	*1*	*1.0*	*0*	*0.0*	*101*	*100.0*
Arizona	1,129	18.7	4,768	79.1	134	2.2	0	0.0	0	0.0	0	0.0	0	0.0	6,031	100.0
Arizona (New in 1955-56)	*50*	*7.0*	*663*	*93.0*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*713*	*100.0*
California	52,930 teachers—90.0 per cent—				3,085	5.3	2,440	4.2	259	0.4	71	0.1	18	*	58,805	100.0
Colorado	667	8.8	4,904	65.1	744	9.9	1,063	14.1	50	0.7	8	0.1	97	1.3	7,533	100.0
Colorado (New in 1955-56)	*16*	*2.9*	*418*	*77.0*	*36*	*6.6*	*61*	*11.2*	*9*	*1.7*	*3*	*0.6*	*0*	*0.0*	*543*	*100.0*
Connecticut	1,690	16.8	6,289	62.4	764	7.6	1,252	12.4	45	0.4	26	0.3	10	0.1	10,076	100.0
Connecticut (New in 1955-56)	*101*	*7.4*	*1,170*	*85.6*	*54*	*4.0*	*40*	*2.9*	*1*	*0.1*	*0*	*0.0*	*0*	*0.0*	*1,366*	*100.0*
Delaware	231	15.8	976	66.6	72	4.9	103	7.0	27	1.8	57	3.9	0	0.0	1,466	100.0
Delaware (New in 1955-56)	*19*	*9.8*	*131*	*67.5*	*9*	*4.6*	*29*	*14.9*	*3*	*1.6*	*3*	*1.6*	*0*	*0.0*	*194*	*100.0*
D. C.	1,565 teachers—82.7 per cent—				183	9.7	107	5.6	19	1.0	19	1.0	0	0.0	1,893	100.0
D. C. (New in 1955-56)	*126 teachers—100.0 per cent—*				*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*126*	*100.0*
Hawaii	885	49.3	572	31.8	199	11.1	93	5.2	23	1.3	23	1.3	0	0.0	1,795	100.0
Hawaii (New in 1955-56)	*73*	*23.6*	*191*	*61.8*	*45*	*14.6*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*309*	*100.0*
Illinois	6,607	17.5	18,883	50.2	5,205	13.8	5,630	15.0	1,091	2.9	212	0.6	0	0.0	37,628	100.0
Indiana	3,100	17.8	10,300	59.0	1,315	7.5	2,580	14.8	120	0.7	25	0.1	10	0.1	17,450	100.0
Indiana (New in 1955-56)	*124*	*8.4*	*1,042*	*70.8*	*102*	*6.9*	*181*	*12.3*	*17*	*1.2*	*6*	*0.4*	*0*	*0.0*	*1,472*	*100.0*
Iowa[b]	1,115	7.4	3,089	20.6	1,591	10.6	5,114	34.1	2,080	13.9	1,973	13.2	36	0.2	14,998	100.0
Iowa (New in 1954-55)	*47*	*4.5*	*244*	*23.1*	*54*	*5.1*	*662*	*62.8*	*47*	*4.5*	*0*	*0.0*	*0*	*0.0*	*1,054*	*100.0*
Kansas	2,374	18.4	5,135	39.9	1,988	15.5	3,074	23.9	283	2.2	12	0.1	4	*	12,870	100.0
Kansas (New in 1955-56)	*152*	*9.1*	*774*	*46.3*	*170*	*10.2*	*569*	*34.1*	*5*	*0.3*	*0*	*0.0*	*0*	*0.0*	*1,670*	*100.0*
Kentucky	979	6.8	5,200	35.9	2,674	18.5	4,263	29.4	844	5.8	472	3.2	53	0.4	14,485	100.0
Maryland	1,444	15.0	5,459	56.8	925	9.6	1,543	16.0	250	2.6	0	0.0	0	0.0	9,621	100.0
Mississippi (White)	396	7.2	3,662	66.4	858	15.6	319	5.8	144	2.6	131	2.4	0	0.0	5,510	100.0
Mississippi (Negro)	39	0.7	1,343	25.8	1,086	20.8	1,201	23.1	1,052	20.2	489	9.4	0	0.0	5,210	100.0
Missouri	3,428	19.5	7,875	44.7	2,116	12.0	3,086	17.6	1,063	6.0	22	0.1	14	0.1	17,604	100.0
Missouri (New in 1955-56)	*97*	*9.2*	*518*	*49.4*	*60*	*5.7*	*243*	*23.2*	*122*	*11.6*	*3*	*0.3*	*6*	*0.6*	*1,049*	*100.0*
Montana	517	12.6	1,066	26.0	793	19.3	1,480	36.1	162	4.0	40	1.0	41	1.0	4,099	100.0
Montana (New in 1955-56)	*13*	*5.1*	*57*	*22.4*	*37*	*14.6*	*136*	*53.6*	*9*	*3.5*	*0*	*0.0*	*2*	*0.8*	*254*	*100.0*
Nebraska	332	3.6	2,002	21.7	1,250	13.6	2,320	25.2	1,679	18.2	1,468	15.9	170	1.8	9,221	100.0
Nebraska (New in 1955-56)	*16*	*1.3*	*197*	*15.5*	*42*	*3.3*	*249*	*19.6*	*121*	*9.5*	*483*	*38.0*	*163*	*12.8*	*1,271*	*100.0*

Nevada	206	14.1	738	50.7	228	15.7	232	15.9	46	3.2	6	0.4	0	0.0	1,456	100.0
Nevada (New in 1955-56)	*21*	*9.3*	*131*	*58.0*	*20*	*8.8*	*40*	*17.7*	*12*	*5.3*	*2*	*0.9*	*0*	*0.0*	*226*	*100.0*
New Hampshire[b]	101	5.0	758	37.6	283	14.0	716	35.5	91	4.5	55	2.7	15	0.7	2,019	100.0
New Hampshire (New in 1954-55)	*23*	*7.2*	*186*	*57.9*	*31*	*9.7*	*65*	*20.3*	*10*	*3.1*	*4*	*1.2*	*2*	*0.6*	*321*	*100.0*
New Mexico	935	20.9	3,195	71.5	279	6.2	61	1.4	1	*	0	0.0	0	0.0	4,471	100.0
New Mexico (New in 1955-56)	*94*	*16.3*	*429*	*74.3*	*38*	*6.6*	*16*	*2.8*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*577*	*100.0*
North Carolina (White)	1,600	8.9	14,537	80.8	1,300	7.2	350	2.0	150	0.8	45	0.3	0	0.0	17,982	100.0
North Carolina (White—New in 1955-56)	*34*	*2.0*	*1,324*	*78.0*	*252*	*14.9*	*56*	*3.3*	*22*	*1.3*	*5*	*0.3*	*4*	*0.2*	*1,697*	*100.0*
North Carolina (Negro)	900	13.0	5,918	85.7	75	1.1	15	0.2	0	0.0	0	0.0	0	0.0	6,908	100.0
North Carolina (Negro—New in 1955-56)	*8*	*1.8*	*432*	*94.9*	*15*	*3.3*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*455*	*100.0*
North Dakota[c]	—65 teachers—2.7 per cent—				54	2.3	586	24.5	1,006	42.0	571	23.8	112	4.7	2,394	100.0
Ohio	5,105	14.8	16,605	48.1	5,433	15.7	6,573	19.0	746	2.2	79	0.2	0	0.0	34,541	100.0
Ohio (New in 1955-56)	*—2,717 teachers—77.6 per cent—*				*0*	*0.0*	*784*	*22.4*	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*	*3,501*	*100.0*
Oklahoma[b]	2,678	23.0	8,857	76.0	82	0.7	28	0.3	0	0.0	0	0.0	0	0.0	11,625	100.0
Oregon	3,023	32.0	3,925	41.5	1,875	19.9	557	5.9	65	0.7	0	0.0	0	0.0	9,445	100.0
Oregon (New in 1955-56)	*288*	*25.2*	*543*	*47.5*	*205*	*18.0*	*99*	*8.7*	*7*	*0.6*	*0*	*0.0*	*0*	*0.0*	*1,142*	*100.0*
Puerto Rico	—1,403 teachers—17.8 per cent—				—6,150 teachers—78.2 per cent—				—312 teachers—4.0 per cent—				0	0.0	7,865	100.0
Puerto Rico (New in 1955-56)	*—333 teachers—35.0 per cent—*				*—470 teachers—49.3 per cent—*				*—150 teachers—15.7 per cent—*				*0*	*0.0*	*953*	*100.0*
South Carolina (White)	576	8.0	4,951	68.6	904	12.5	553	7.7	—234 teachers—3.2 per cent—						7,218	100.0
South Carolina (Negro)	331	6.2	3,770	70.4	704	13.2	418	7.8	—129 teachers—2.4 per cent—						5,352	100.0
South Dakota	—918 teachers—15.5 per cent—				—2,389 teachers—40.5 per cent—				2,393	40.6	200	3.4	0	0.0	5,900	100.0
South Dakota (New in 1955-56)	*—42 teachers—7.9 per cent—*				*—241 teachers—45.5 per cent—*				*247*	*46.6*	*0*	*0.0*	*0*	*0.0*	*530*	*100.0*
Tennessee	2,002	10.5	9,372	49.1	2,603	13.7	4,057	21.3	324	1.7	711	3.7	0	0.0	19,069	100.0
Tennessee (New in 1955-56)	*16*	*1.5*	*664*	*61.8*	*73*	*6.8*	*136*	*12.7*	*41*	*3.8*	*144*	*13.4*	*0*	*0.0*	*1,074*	*100.0*
Texas	12,037	30.2	26,287	66.0	951	2.4	403	1.0	138	0.4	0	0.0	15	*	39,831	100.0
Utah	793	20.5	2,359	60.8	278	7.2	323	8.3	88	2.3	32	0.8	4	0.1	3,877	100.0
Utah (New in 1955-56)	*6*	*1.2*	*393*	*80.0*	*39*	*8.0*	*42*	*8.6*	*7*	*1.4*	*3*	*0.6*	*1*	*0.2*	*491*	*100.0*
Vermont	77	4.0	715	37.6	269	14.2	653	34.4	159	8.4	26	1.4	0	0.0	1,899	100.0
Vermont (New in 1955-56)	*5*	*2.2*	*137*	*60.6*	*8*	*3.5*	*53*	*23.5*	*17*	*7.5*	*6*	*2.7*	*0*	*0.0*	*226*	*100.0*
Virginia (White)[b]	225	1.9	5,945	49.1	—4,340 teachers—35.8 per cent—				—1,593 teachers—13.2 per cent—				0	0.0	12,103	100.0
Virginia (Negro)[b]	251	6.8	2,765	75.4	—589 teachers—16.1 per cent—				—64 teachers—1.7 per cent—				0	0.0	3,669	100.0
West Virginia	1,537	14.5	4,949	46.5	957	9.0	2,019	19.0	370	3.5	726	6.8	76	0.7	10,634	100.0
West Virginia (New in 1955-56)	*28*	*3.7*	*221*	*29.2*	*67*	*8.9*	*166*	*22.0*	*86*	*11.4*	*134*	*17.7*	*54*	*7.1*	*756*	*100.0*
Wisconsin	1,735	10.8	6,155	38.1	2,331	14.4	4,952	30.7	899	5.6	67	0.4	0	0.0	16,139	100.0
Wisconsin (New in 1955-56)	*51*	*2.8*	*706*	*38.7*	*139*	*7.6*	*791*	*43.4*	*131*	*7.2*	*6*	*0.3*	*0*	*0.0*	*1,824*	*100.0*
Wyoming	51	2.6	775	40.4	339	17.7	616	32.1	123	6.4	16	0.8	0	0.0	1,920	100.0
Wyoming (New in 1955-56)	*5*	*1.7*	*90*	*31.5*	*36*	*12.6*	*107*	*37.4*	*40*	*14.0*	*8*	*2.8*	*0*	*0.0*	*286*	*100.0*
TOTAL	—331,508 teachers—69.3 per cent—				—119,257 teachers—25.0 per cent—				—27,340 teachers—5.7 per cent—						478,105	100.0%

* Less than one-tenth of one per cent. [b] For 1954-55, not the current year. [c] Includes only the rural school teachers.

TABLE 10—OCCUPATION, ON NOVEMBER 1, 1955, OF PERSONS WHO GRADUATED BETWEEN SEPTEMBER 1, 1954, AND AUGUST 31, 1955, WITH QUALIFICATIONS FOR STANDARD TEACHING CERTIFICATES

Complete reports from: Alabama, Alaska, Connecticut, Delaware, Georgia, Hawaii, Idaho, Indiana, Kansas, Kentucky, Mississippi, Missouri, Montana, Nebraska, New Jersey, New Mexico, North Carolina, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Utah, Vermont, Virginia, Washington, Wisconsin and Wyoming.
Incomplete reports from: Arizona, Colorado, District of Columbia, Florida, Illinois, Louisiana, Maryland, Michigan, Minnesota, Nevada, North Dakota, Ohio, Puerto Rico, South Carolina, Texas, and West Virginia.

Field of preparation	Percent teaching			Percent not teaching								
	In State	Out of State	Total	Otherwise gainfully employed	Continuing formal study	Military service	Homemaking (women)	Seeking teaching job	Seeking non-teaching job	No information	Total percent	Number of graduates included
1	2	3	4	5	6	7	8	9	10	11	12	13
High school (by field)												
Agriculture												
Men only	37.6%	7.0%	44.6%	14.0%	4.8%	22.1%	0.0%	3.4%	0.7%	10.4%	100.0%	1,094
Art												
Men	46.3	11.2	57.5	4.5	8.3	15.5	0.0	1.1	1.6	11.5	100.0	574
Women	53.5	16.8	70.3	7.5	3.8	0.1	7.7	1.3	0.3	9.0	100.0	718
Both	51.0	14.9	65.9	6.5	5.3	5.4	5.1	1.2	0.7	9.9	100.0	1,092
Commerce												
Men	39.8	9.0	48.8	23.7	5.1	13.8	0.0	1.4	0.5	6.7	100.0	1,127
Women	48.8	11.9	60.7	19.1	1.7	0.5	9.2	1.3	0.5	7.0	100.0	2,104
Both	45.6	10.9	56.5	20.7	2.9	5.1	6.0	1.4	0.5	6.9	100.0	3,231
English												
Men	45.5	15.6	61.1	7.4	10.3	10.8	0.0	1.1	0.3	9.0	100.0	1,137
Women	56.0	16.9	72.9	5.1	4.4	0.2	7.2	1.5	0.4	8.3	100.0	2,686
Both	52.9	16.5	69.4	5.8	6.1	3.4	5.1	1.4	0.3	8.5	100.0	3,823
Foreign language												
Men	32.6	15.3	47.9	8.4	22.2	11.1	0.0	3.5	0.0	6.9	100.0	261
Women	50.6	15.4	66.0	5.9	9.5	0.0	7.0	3.2	0.8	7.6	100.0	526
Both	44.6	15.4	60.0	6.7	13.7	3.7	4.7	3.3	0.5	7.4	100.0	787
Home economics												
Women only	51.4	14.3	65.7	10.1	2.2	0.2	11.7	2.1	0.4	7.6	100.0	2,748
Industrial arts												
Men only	47.1	14.0	61.1	10.8	5.4	15.8	0.0	0.9	0.5	5.5	100.0	1,401
Journalism												
Men	20.0	5.0	25.0	35.0	5.0	20.0	0.0	0.0	0.0	15.0	100.0	20
Women	45.4	9.1	54.5	15.2	6.1	0.0	3.0	3.0	6.1	12.1	100.0	33
Both	35.9	7.5	43.4	22.6	5.7	7.5	1.9	1.9	3.8	13.2	100.0	53
Library science												
Men	71.4	14.3	85.7	9.5	4.8	0.0	0.0	0.0	0.0	0.0	100.0	21
Women	59.7	18.5	78.2	10.2	2.3	0.0	5.1	0.5	0.0	3.7	100.0	216
Both	60.8	18.1	78.9	10.1	2.5	0.0	4.7	0.4	0.0	3.4	100.0	237
Mathematics												
Men	52.4	13.1	65.5	7.1	7.7	14.2	0.0	0.4	0.2	4.9	100.0	1,047
Women	56.1	14.4	70.5	8.3	6.0	0.5	6.3	0.9	0.3	7.2	100.0	569
Both	53.7	13.6	67.3	7.5	7.1	9.4	2.2	0.6	0.2	5.7	100.0	1,616
Music												
Men	49.4	13.3	62.7	4.8	8.2	17.4	0.0	1.0	0.1	5.8	100.0	1,231
Women	55.1	20.4	75.5	4.1	4.0	0.1	9.6	1.0	0.4	7.3	100.0	1,606
Both	51.5	17.3	68.8	4.4	5.8	7.6	5.5	1.0	0.3	6.6	100.0	2,837
Physical education												

Both	51.5	17.3	68.8	4.4	5.8	7.6	5.5	1.0	0.3	6.6	100.0	2,857
Physical education												
Men	43.5	11.2	54.7	7.3	5.8	22.9	0.0	0.6	0.5	8.2	100.0	3,232
Women	58.1	20.0	78.1	3.5	3.5	0.6	6.1	0.8	0.4	7.0	100.0	1,588
Both	48.3	14.1	62.4	6.1	5.0	15.5	2.0	0.7	0.5	7.8	100.0	4,820
General science												
Men	46.4	13.4	58.8	7.2	7.3	16.0	0.0	2.1	0.1	8.5	100.0	756
Women	54.7	12.2	66.9	9.3	2.2	0.7	6.5	1.4	0.4	12.6	100.0	278
Both	48.6	12.4	61.0	7.7	5.9	11.9	1.8	1.9	0.2	9.6	100.0	1,034
Biology												
Men	41.4	9.3	50.7	7.7	11.3	17.9	0.0	1.0	0.3	11.1	100.0	665
Women	44.9	18.8	63.7	9.8	8.3	0.0	5.7	1.2	0.9	10.4	100.0	336
Both	42.5	12.5	55.0	8.4	10.3	11.9	1.9	1.1	0.5	10.9	100.0	1,001
Chemistry												
Men	35.7	8.0	43.7	16.3	15.2	14.1	0.0	0.4	0.8	9.5	100.0	263
Women	37.6	17.2	54.8	20.5	16.1	0.0	4.3	0.0	0.0	4.3	100.0	93
Both	36.2	10.4	46.6	17.4	15.5	10.4	1.1	0.3	0.6	8.1	100.0	356
Physics												
Men	40.7	16.8	57.5	9.7	14.2	13.3	0.0	0.0	0.9	4.4	100.0	113
Women	50.0	0.0	50.0	20.0	20.0	0.0	0.0	0.0	0.0	10.0	100.0	10
Both	41.5	15.4	56.9	10.6	14.6	12.2	0.0	0.0	0.8	4.9	100.0	123
Social studies												
Men	44.7	11.6	56.3	8.1	11.3	13.8	0.0	1.4	0.3	8.8	100.0	3,521
Women	48.8	14.4	63.2	7.6	5.5	0.0	9.0	3.8	0.5	10.4	100.0	1,665
Both	46.0	12.5	58.5	8.0	9.4	9.3	2.9	2.2	0.4	9.3	100.0	5,184
Speech												
Men	39.7	10.3	50.0	10.7	13.7	16.8	0.0	2.7	0.4	5.7	100.0	262
Women	46.4	21.2	67.6	6.6	5.8	0.0	12.9	2.0	0.6	4.5	100.0	513
Both	44.1	17.6	61.7	8.0	8.5	5.7	8.5	2.2	0.5	4.9	100.0	775
Other												
Men	50.6	9.9	60.5	8.5	7.6	6.8	0.0	1.6	0.6	14.4	100.0	633
Women	42.2	11.4	53.6	9.3	5.8	0.0	5.2	0.9	0.0	27.2	100.0	573
Both	46.6	10.7	57.2	8.9	5.8	3.6	2.5	1.2	0.3	20.5	100.0	1,206
High school total[a]												
Men	47.1	10.7	57.8	8.9	8.2	15.3	0.0	1.4	0.4	8.0	100.0	18,711
Women	53.3	15.2	68.5	8.2	4.0	0.2	8.3	1.8	0.4	8.6	100.0	17,244
Both	50.1%	12.8%	62.9%	8.6%	6.2%	8.1%	4.0%	1.6%	0.4%	8.2%	100.0%	35,955
Elementary total												
Men	62.1	12.5	74.6	4.9	5.9	7.1	0.0	1.3	0.1	6.1	100.0	3,757
Women	70.1	12.6	82.7	1.4	1.2	[b]	5.1	1.6	0.1	7.9	100.0	25,288
Both	69.0%	12.6%	81.6%	1.8%	1.8%	1.0%	4.5%	1.5%	0.1%	7.7%	100.0%	29,045
GRAND TOTAL												
Men	49.6	11.0	60.6	8.2	7.8	14.0	0.0	1.4	0.4	7.6	100.0	22,468
Women	63.3	13.6	76.9	4.2	2.3	0.1	6.4	1.7	0.2	8.2	100.0	42,532
Both	58.5%	12.8%	71.3%	5.6%	4.2%	4.9%	4.2%	1.5%	0.3%	8.0%	100.0%	65,000

[a]This total is greater than the sum of the above specific teaching-field reports because the California total, included here, could not be broken down by fields. [b]Less than one-tenth of one per cent.

agriculture has dropped more rapidly (52.1 per cent from 1950 to 1956) than the number of graduates prepared in any other field. Table 10 shows that teaching attracted only 44.6 per cent of this rapidly diminishing number. Such data provoke important questions concerning the future of this subject in the curriculum.

Other gainful occupations, as might be expected, draw most heavily from the potential teachers of the commercial subjects, taking a total of 20.7 per cent. Next to be affected is chemistry, with 17.4 per cent of its eligibles lost to other occupations. Then comes agriculture, with a loss of 14 per cent.

Only about one in 25 of the potential teachers in the class of 1955 is continuing formal study. Of the chemistry majors, however, as many as 15.5 per cent are pursuing advanced study, as are 14.6 per cent of the physics majors and 10.3 per cent of the biology majors. Only 1.8 per cent of those prepared for elementary teaching are now doing so.

Military service claimed 22.1 per cent of the agriculture majors, 15.8 per cent of the industrial arts majors, and 22.9 per cent of the men who majored in physical education. The group prepared to teach the various sciences also contributed 11.7 per cent of its total to the armed forces.

Students who choose to prepare at the undergraduate level to teach and who, after graduation, continue with formal study or enter the military service, probably are better prospects for teaching at a later date than are those who enter other gainful occupations.

The figures contained in Table 10 show that marriage has almost disappeared as a bar to women who desire to teach. The total number of married women in the class of 1955 is not known, but only 5.7 per cent of all women have chosen to devote full time to homemaking.

Only a few members of the class of 1955 (1.3 per cent) were still seeking teaching positions on November 1, and fewer than half of one per cent were seeking non-teaching jobs.

More Information Needed

The obvious usefulness of the foregoing information is instantly recognized by college officials. Two years ago, when this part was added to the annual national study only a few of the colleges were able to supply accurate information on the occupational activities of their most recent graduates. The 1954 report accounted (vocationally) for only 13.2 per cent of the 1953 class members who were prepared to become teachers. A year ago the 1955 report accounted for 47.9 per cent of the 1954 class. Table 10 of this report now accounts for 74.3 per cent—65,000 of the 87,409 members of the 1955 class prepared to enter teaching. All of this group are bachelor's degree graduates. A question yet to be explored is, "What occupations consume the products of the graduate schools—recipients of master's and doctor's degrees?" As many as 44.4 per cent of all master's degrees and 15.3 per cent of all doctors degrees granted in 1955 were in the field of education.

Colleges and universities, with their enrollments now at an all-time high, are stepping up their competition for holders of advanced degrees. Master's degree holders who would ordinarily join high school teaching staffs will be sought, more and more, by institutions of higher education.

The problem of staffing higher education will further complicate the task of staffing the elementary and high schools. Much more research is needed if we are to understand the implications of this growing problem.

APPENDIX A

Total Number of College and University Students Completing Certificate Requirements in the 48 States, Alaska, District of Columbia, Hawaii, and Puerto Rico, by Sex and by Major Field in 1956, and by Major Field in 1955

Type of Preparation	All institutions in ALABAMA				ALASKA (Univ. of)				All institutions in ARIZONA				All institutions in ARKANSAS			
	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955
ELEMENTARY																
120 semester hours	30	533	563	615	3	4	7	7	72	323	395	345	30	300	330	499
90 semester hours	5	132	137	195	...	...	...	1	...	...	...	...	16	95	111	136
60 semester hours	2	46	48	51	...	...	...	...	...	...	...	...	3	76	79	53
30 semester hours	9	80	89	56	...	...	...	...	...	...	...	...	7	76	83	144
ELEMENTARY TOTAL	46	791	837	917	3	4	7	8	72	323	395	345	56	547	603	832
HIGH SCHOOL																
Agriculture	44	...	44	63	...	...	...	...	3	...	3	2	53	...	53	45
Art	...	10	10	12	...	...	...	...	6	3	9	11	2	5	7	5
Commerce	30	87	117	82	...	...	...	...	29	14	43	16	25	70	95	76
English	20	98	118	116	...	3	3	4	21	15	36	23	19	57	76	64
Foreign Language	7	14	21	27	...	...	...	...	10	5	15	14	1	2	3	1
Home Economics	...	115	115	146	...	1	1	2	...	21	21	21	...	102	102	100
Industrial Arts	20	1	21	55	...	...	...	...	22	...	22	16	34	5	39	26
Journalism	...	...	...	...	...	...	...	...	...	...	...	1	2	...	2	1
Library Science	...	9	9	9	...	...	...	...	...	...	...	...	...	...	...	...
Mathematics	26	29	55	55	1	...	1	...	7	1	8	4	27	7	34	26
Music	22	34	56	45	...	...	...	...	9	10	19	17	27	21	48	59
Physical Ed.--Men	128	...	128	130	1	...	1	1	63	...	63	35	121	...	121	111
Physical Ed.--Women	...	59	59	50	...	...	...	...	...	22	22	17	...	29	29	39
General Science	39	10	49	38	2	...	2	3	6	...	6	5	12	4	16	8
Biology	13	20	33	34	1	...	1	...	11	4	15	9	9	4	13	6
Chemistry	17	1	18	16	...	...	...	...	1	...	1	1	2	...	2	1
Physics	1	...	1	1	...	...	...	...	1	...	1	4	1	...	1	...
Social Sciences	126	87	213	202	3	...	3	2	38	6	44	29	97	60	157	155
Speech	2	18	20	13	...	...	...	...	5	3	8	6	7	12	19	16
Other	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
HIGH SCHOOL TOTAL	495	592	1087	1094	8	4	12	12	232	104	336	231	439	378	817	741
GRAND TOTAL	541	1383	1924	2011	11	8	19	20	304	427	731	576	495	925	1420	1573

Type of Preparation	All institutions in CALIFORNIA				All institutions in COLORADO				All institutions in CONNECTICUT				All institutions in DELAWARE			
	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955
ELEMENTARY																
120 semester hours	695	3469	4164	4157	67	465	532	744	99	350	449	420	5	56	61	40
90 semester hours	...	...	...	...	12	44	56	61	...	...	...	...	...	...	...	...
60 semester hours	...	...	...	...	25	92	117	73	...	...	...	...	...	...	...	...
30 semester hours	...	...	...	...	...	...	...	...	8	4	12	16	...	...	...	...
ELEMENTARY TOTAL	695	3469	4164	4157	104	601	705	878	107	354	461	436	5	56	61	40
HIGH SCHOOL																
Agriculture	43	...	43	86	25	...	25	15	...	...	...	1	4	...	4	2
Art	127	147	274	254	20	21	41	54	4	9	13	11	1	2	3	1
Commerce	189	124	313	260	73	52	125	97	10	16	26	25	2	1	3	1
English	125	138	263	327	41	71	112	101	29	45	74	55	2	8	10	5
Foreign Language	69	73	142	116	12	10	22	14	8	28	36	26	...	1	1	3
Home Economics	...	225	225	191	...	60	60	39	...	15	15	19	...	5	5	7
Industrial Arts	224	4	228	222	65	...	65	76	18	...	18	21	...	...	...	...
Journalism	...	...	...	...	2	...	2	2	...	...	...	...	...	...	...	...
Library Science	3	1	4	17	6	21	27	22	...	7	7	1	...	...	...	...
Mathematics	70	22	92	88	32	7	39	50	15	16	31	20	3	1	4	3
Music	189	110	299	312	47	30	77	85	17	11	28	25	...	2	2	1
Physical Ed.--Men	393	...	393	402	123	...	123	109	41	...	41	38	14	...	14	7
Physical Ed.--Women	...	180	180	186	...	49	49	53	...	34	34	21	...	11	11	7
General Science	219	53	272	254	27	11	38	20	3	2	5	9	...	...	...	...
Biology	...	...	...	...	17	7	24	42	10	5	15	9	1	3	4	2
Chemistry	...	...	...	...	20	1	21	11	2	2	4	5	...	...	...	...
Physics	...	...	...	...	2	1	3	5	1	...	1	3	...	...	...	...
Social Sciences	475	160	635	674	131	51	182	155	60	37	97	68	5	1	6	4
Speech	104	83	187	181	10	11	21	25	...	1	1	2	...	...	...	...
Other	368	285	653	634	38	16	54	62	5	20	25	9	...	...	...	...
HIGH SCHOOL TOTAL	2598	1605	4203	4204	691	419	1110	1037	229	248	471	368	32	35	67	43
GRAND TOTAL	3293	5074	8367	8361	795	1020	1815	1915	330	602	932	804	37	91	128	83

APPENDIX A—Continued

Total Number of College and University Students Completing Certificate Requirements in the 48 States, Alaska, District of Columbia, Hawaii, and Puerto Rico, by Sex and by Major Field in 1956, and by Major Field in 1955

Type of Preparation	All institutions in DIST. OF COLUMBIA				All institutions in FLORIDA				All white institutions in GEORGIA				All Negro institutions in GEORGIA			
	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955
ELEMENTARY																
120 semester hours	14	153	167	94	65	719	784	660	12	408	420	613	41	287	328	534
90 semester hours	...	...	...	...	...	...	...	...	7	29	36	30	...	...	...	...
60 semester hours	...	...	...	...	...	...	...	...	8	27	35	36	...	...	...	...
30 semester hours	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
ELEMENTARY TOTAL	14	153	167	94	65	719	784	660	27	464	491	679	41	287	328	534
HIGH SCHOOL																
Agriculture	...	...	...	2	40	...	40	29	18	...	18	21	19	...	19	22
Art	1	4	5	5	15	24	39	24	...	7	7	10	...	...	...	1
Commerce	3	5	8	8	30	45	75	71	17	41	58	56	7	24	31	30
English	5	23	28	23	25	68	93	79	19	47	66	62	10	37	47	34
Foreign Language	...	3	3	8	4	7	11	6	1	4	5	4	...	2	2	1
Home Economics	...	2	2	7	...	23	23	15	...	67	67	63	...	16	16	13
Industrial Arts	...	...	...	...	33	...	33	24	24	...	24	23	11	...	11	9
Journalism	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...
Library Science	...	...	...	...	1	4	5	7	...	...	...	...	...	...	...	...
Mathematics	9	13	22	11	37	29	66	46	10	11	21	15	18	14	32	18
Music	3	11	14	14	40	32	72	72	9	15	24	13	3	9	12	9
Physical Ed.—Men	23	...	23	12	124	...	124	70	43	...	43	38	10	...	10	6
Physical Ed.—Women	...	6	6	10	...	52	52	47	...	22	22	17	...	...	...	7
General Science	4	5	9	13	23	12	35	30	10	7	17	14	16	7	23	9
Biology	6	1	7	10	20	8	28	25	3	3	6	5	5	2	7	6
Chemistry	1	...	1	...	7	2	9	7	...	1	1	...	2	1	3	1
Physics	...	...	...	1	...	...	...	2	...	...	...	1	...	...	...	...
Social Sciences	22	16	38	36	131	56	187	110	40	33	73	73	42	22	64	54
Speech	6	8	14	13	3	11	14	26	...	...	...	...	...	...	...	...
Other	4	12	16	9	2	...	2	10	...	9	9	1	...	...	...	...
HIGH SCHOOL TOTAL	87	109	196	182	536	373	909	700	194	267	461	416	143	134	277	220
GRAND TOTAL	101	262	363	276	601	1092	1693	1360	221	731	952	1095	184	421	605	754

Type of Preparation	HAWAII (Univ. of)				All institutions in IDAHO				All institutions in ILLINOIS				All institutions in INDIANA			
	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955
ELEMENTARY																
120 semester hours	2	159	161	97	18	92	110	99	372	1939	2311	2101	74	726	800	702
90 semester hours	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
60 semester hours	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30 semester hours	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
ELEMENTARY TOTAL	2	159	161	97	18	92	110	99	372	1939	2311	2101	74	726	800	702
HIGH SCHOOL																
Agriculture	4	...	4	4	17	...	17	10	57	...	57	51	33	...	33	28
Art	...	...	...	...	1	1	2	6	23	73	96	77	21	35	56	64
Commerce	...	3	3	2	11	23	34	25	128	144	272	225	120	94	214	116
English	...	5	5	8	10	17	27	24	80	217	297	260	56	133	189	174
Foreign Language	...	...	...	...	...	1	1	3	36	52	88	74	19	42	61	45
Home Economics	...	10	10	11	...	31	31	30	...	170	170	159	...	134	134	101
Industrial Arts	...	...	...	...	9	...	9	3	137	...	137	100	59	...	59	57
Journalism	...	...	...	...	1	...	1	...	3	1	4	3	...	1	1	5
Library Science	...	2	2	...	...	...	...	1	3	13	16	25	...	5	5	15
Mathematics	2	7	9	5	5	4	9	5	79	53	132	126	44	26	70	50
Music	2	1	3	3	17	9	26	20	140	163	303	287	56	69	125	128
Physical Ed.—Men	1	...	1	1	44	...	44	45	316	...	316	247	237	...	237	234
Physical Ed.—Women	...	2	2	2	...	7	7	11	...	159	159	159	...	49	49	55
General Science	1	4	5	3	9	...	9	8	22	13	35	34	33	5	38	41
Biology	...	...	...	...	1	1	2	4	55	42	97	69	33	6	39	33
Chemistry	...	...	...	...	...	...	...	1	41	5	46	35	14	1	15	30
Physics	...	...	...	...	...	...	...	...	13	...	13	13	13	2	15	13
Social Sciences	1	6	7	10	33	8	41	32	302	138	440	351	140	72	212	182
Speech	...	2	2	1	3	1	4	4	31	54	85	78	15	49	64	65
Other	...	...	...	...	5	2	7	10	38	31	69	83	30	51	81	41
HIGH SCHOOL TOTAL	11	42	53	50	166	105	271	242	1504	1328	2832	2456	923	774	1697	1477
GRAND TOTAL	13	201	214	147	184	197	381	341	1876	3267	5143	4557	997	1500	2497	2179

APPENDIX A—Continued

Total Number of College and University Students Completing Certificate Requirements in the 48 States, Alaska, District of Columbia, Hawaii, and Puerto Rico, by Sex and by Major Field in 1956, and by Major Field in 1955

Type of Preparation	All institutions in IOWA				All institutions in KANSAS				All institutions in KENTUCKY				All white institutions in LOUISIANA			
	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955
ELEMENTARY																
120 semester hours	44	408	452	411	64	462	526	573	99	507	606	641	112	523	635	597
90 semester hours	1	10	11	26	2	5	7	...	...	...	...	...	...	...	...	...
60 semester hours	52	1242	1294	969	111	569	680	671	111	278	389	341	...	...	...	...
30 semester hours	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
ELEMENTARY TOTAL	97	1660	1757	1406	177	1036	1213	1244	210	785	995	982	112	523	635	597
HIGH SCHOOL																
Agriculture	50	...	50	49	31	...	31	22	31	...	31	39	22	...	22	25
Art	20	28	48	42	10	33	43	26	17	15	32	27	4	13	17	15
Commerce	56	44	100	85	60	53	113	70	48	80	128	117	38	103	141	91
English	35	96	131	135	26	64	90	103	28	75	103	92	19	74	93	62
Foreign Language	8	12	20	16	...	11	11	12	2	12	14	19	5	7	12	14
Home Economics	...	152	152	125	4	127	131	102	...	110	110	83	...	98	98	71
Industrial Arts	53	...	53	42	85	...	85	56	50	...	50	41	73	...	73	51
Journalism	5	6	11	13	1	...	1	1	...	...	...	...	...	...	...	...
Library Science	...	3	3	2	...	2	2	4	...	9	9	5	2	1	3	...
Mathematics	41	13	54	49	31	12	43	40	13	14	27	25	39	19	58	46
Music	72	81	153	133	55	75	130	115	37	50	87	97	40	39	79	51
Physical Ed.—Men	165	...	165	132	128	...	128	125	101	...	101	94	125	...	125	135
Physical Ed.—Women	...	65	65	51	...	43	43	52	...	33	33	26	...	45	45	38
General Science	42	13	55	41	15	3	18	17	13	7	20	18	33	11	44	36
Biology	22	6	28	26	31	3	34	28	22	11	33	25	5	...	5	7
Chemistry	12	1	13	12	5	4	9	8	7	2	9	8	...	...	...	1
Physics	3	...	3	5	4	...	4	2	2	...	2	2	...	...	...	1
Social Sciences	112	43	155	151	113	48	161	138	130	40	170	180	56	34	90	74
Speech	22	56	78	83	11	14	25	19	6	9	15	10	11	33	44	26
Other	7	...	7	19	9	4	13	15	21	1	22	21	5	1	6	1
HIGH SCHOOL TOTAL	725	619	1344	1211	619	496	1115	955	528	468	996	929	477	478	955	745
GRAND TOTAL	822	2279	3101	2617	796	1532	2328	2199	738	1253	1991	1911	589	1001	1590	1342

Type of Preparation	All Negro institutions in LOUISIANA				All institutions in MAINE				All institutions in MARYLAND				All institutions in MASSACHUSETTS			
	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955
ELEMENTARY																
120 semester hours	86	567	653	629	49	123	172	172	47	382	429	361	172	1203	1375	1255
90 semester hours	...	...	...	...	5	9	14	15	...	...	...	...	3	9	12	...
60 semester hours	...	...	...	...	...	...	...	15	...	...	...	...	3	9	12	2
30 semester hours	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
ELEMENTARY TOTAL	86	567	653	629	54	132	186	202	47	382	429	361	178	1221	1399	1257
HIGH SCHOOL																
Agriculture	20	...	20	16	...	...	...	...	14	...	14	11	...	...	...	...
Art	14	5	19	4	2	1	3	1	4	18	22	21	17	31	48	52
Commerce	17	44	61	34	10	15	25	15	1	19	20	30	20	82	102	80
English	9	55	64	49	10	18	28	45	20	36	56	47	65	89	154	170
Foreign Language	2	1	3	4	4	6	10	15	8	3	11	14	9	43	52	36
Home Economics	1	48	49	34	...	38	38	24	...	44	44	25	...	87	87	66
Industrial Arts	33	...	33	20	16	...	16	21	15	...	15	16	18	...	18	21
Journalism	...	...	...	...	...	...	...	...	...	...	...	...	2	2	4	1
Library Science	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Mathematics	28	9	37	24	18	4	22	16	13	19	32	23	29	41	70	65
Music	18	22	40	37	2	6	8	7	22	30	52	45	74	56	130	104
Physical Ed.—Men	46	...	46	38	19	...	19	26	24	...	24	38	147	...	147	153
Physical Ed.—Women	...	32	32	20	...	5	5	4	...	27	27	22	...	121	121	99
General Science	9	4	13	10	4	...	4	6	6	6	12	16	25	36	61	58
Biology	15	8	23	6	3	1	4	5	1	8	9	6	3	7	10	11
Chemistry	9	...	9	8	8	...	8	3	...	1	1	2	...	1	1	8
Physics	...	...	...	...	2	...	2	2	...	...	...	...	1	...	1	3
Social Sciences	66	46	112	55	39	10	49	32	45	42	87	94	124	83	207	187
Speech	3	7	10	1	...	1	1	5	...	...	...	...	11	31	42	40
Other	...	...	...	...	1	6	7	2	85	31	116	86	11	15	26	36
HIGH SCHOOL TOTAL	291	281	572	360	138	111	249	229	258	284	542	496	556	725	1281	1186
GRAND TOTAL	377	848	1225	989	192	243	435	431	305	666	971	857	734	1946	2680	2443

APPENDIX A—Continued

Total Number of College and University Students Completing Certificate Requirements in the 48 States, Alaska, District of Columbia, Hawaii, and Puerto Rico, by Sex and by Major Field in 1956, and by Major Field in 1955

Type of Preparation	All Institutions in MICHIGAN				All Institutions in MINNESOTA				All white institutions in MISSISSIPPI				All Negro institutions in MISSISSIPPI			
	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955
ELEMENTARY																
120 semester hours	299	1841	2140	1904	74	625	699	610	14	228	242	239	30	100	130	122
90 semester hours	...	...	...	...	16	378	394	460	...	...	...	...	...	...	...	...
60 semester hours	16	244	260	348	...	...	...	181	...	...	...	...	...	...	...	...
30 semester hours	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
ELEMENTARY TOTAL	315	2085	2400	2252	90	1003	1093	1251	14	228	242	239	30	100	130	122
HIGH SCHOOL																
Agriculture	35	...	35	19	32	...	32	22	36	...	36	35	3	...	3	13
Art	31	80	111	98	32	59	91	45	3	2	5	10	3	1	4	4
Commerce	81	104	185	123	54	65	119	83	17	85	102	103	12	29	41	20
English	75	181	256	229	95	128	223	180	25	73	98	91	3	24	27	35
Foreign Language	21	60	81	69	35	20	55	30	2	9	11	5	...	...	...	...
Home Economics	...	140	140	124	...	143	143	130	...	74	74	77	...	33	33	27
Industrial Arts	91	16	107	74	88	...	88	64	34	1	35	17	21	...	21	7
Journalism	2	13	15	5	...	...	...	...	...	2	2	2	...	...	...	...
Library Science	3	18	21	10	...	1	1	3	2	15	17	14	...	...	...	...
Mathematics	68	37	105	94	50	16	66	68	31	14	45	30	6	4	10	9
Music	93	109	202	178	95	95	190	177	11	29	40	31	4	4	8	3
Physical Ed.—Men	178	...	178	158	125	...	125	106	101	...	101	86	43	...	43	16
Physical Ed.—Women	...	82	82	71	...	83	83	50	...	23	23	23	...	9	9	6
General Science	40	15	55	48	31	8	39	43	30	17	47	32	20	5	25	19
Biology	47	16	63	54	38	15	53	37	...	...	...	4	4	2	6	5
Chemistry	27	7	34	24	16	2	18	9	...	...	...	3	4	...	4	1
Physics	31	21	52	23	7	...	7	7	...	...	...	...	...	...	...	...
Social Sciences	357	192	549	314	228	45	273	188	77	51	128	126	28	21	49	42
Speech	30	41	71	71	16	31	47	30	7	22	29	11	...	...	...	...
Other	91	177	268	62	13	16	29	23	...	5	5	5	...	...	...	...
HIGH SCHOOL TOTAL	1301	1309	2610	1848	955	727	1682	1295	376	422	798	705	151	132	283	207
GRAND TOTAL	1616	3394	5010	4100	1045	1730	2775	2546	390	650	1040	944	181	232	413	329

Type of Preparation	All Institutions in MISSOURI				All Institutions in MONTANA				All Institutions in NEBRASKA				NEVADA (Univ. of)			
	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955
ELEMENTARY																
120 semester hours	71	788	859	1039	29	72	101	109	72	251	323	374	3	34	37	31
90 semester hours	...	2	2	2	...	...	...	...	...	...	...	3	...	...	...	...
60 semester hours	16	135	151	119	62	220	282	255	51	486	537	536	2	15	17	14
30 semester hours	2	20	22	6	...	...	...	...	12	116	128	146	...	...	...	...
ELEMENTARY TOTAL	89	945	1034	1166	91	292	383	364	135	853	988	1059	5	49	54	45
HIGH SCHOOL																
Agriculture	22	...	22	14	23	...	23	13	16	...	16	19	3	...	3	1
Art	20	28	48	41	4	4	8	13	2	9	11	12	...	...	...	...
Commerce	65	66	131	85	9	20	29	36	38	38	76	60	2	2	4	2
English	25	81	106	106	14	13	27	28	26	38	64	57	3	5	8	6
Foreign Language	3	6	9	15	...	1	1	2	3	14	17	12	...	4	4	2
Home Economics	...	91	91	78	...	32	32	31	...	62	62	48	...	10	10	5
Industrial Arts	61	...	61	33	18	...	18	18	37	...	37	37	...	...	...	...
Journalism	2	2	4	4	...	...	...	...	...	3	3	...	...	3	3	1
Library Science	...	1	1	1	...	...	...	...	...	...	...	...	...	2	2	1
Mathematics	36	12	48	34	11	4	15	15	22	8	30	31	4	1	5	3
Music	46	68	114	100	11	9	20	15	37	36	73	56	2	4	6	1
Physical Ed.—Men	140	...	140	108	40	...	40	30	115	...	115	64	7	...	7	6
Physical Ed.—Women	...	42	42	51	...	14	14	9	...	23	23	13	...	9	9	6
General Science	26	5	31	27	9	2	11	10	12	...	12	7	3	1	4	1
Biology	27	10	37	24	11	8	19	20	22	4	26	17	2	1	3	2
Chemistry	9	...	9	6	...	...	...	5	2	3	5	9	2	1	3	1
Physics	4	1	5	6	...	...	...	...	3	...	3	4	1	...	1	...
Social Sciences	122	53	175	148	33	12	45	27	87	29	116	80	5	6	11	8
Speech	20	28	48	24	...	1	1	9	14	11	25	18	2	3	5	...
Other	2	3	5	5	...	...	...	...	8	18	26	20	...	...	...	...
HIGH SCHOOL TOTAL	630	497	1127	910	183	120	303	281	444	296	740	564	36	52	88	46
GRAND TOTAL	719	1442	2161	2076	274	412	686	645	579	1149	1728	1623	41	101	142	91

APPENDIX A—Continued

Total Number of College and University Students Completing Certificate Requirements in the 48 States, Alaska, District of Columbia, Hawaii, and Puerto Rico, by Sex and by Major Field in 1956, and by Major Field in 1955

Type of Preparation	All institutions in NEW HAMPSHIRE				All institutions in NEW JERSEY				All institutions in NEW MEXICO				All institutions in NEW YORK			
	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955
ELEMENTARY																
120 semester hours	16	94	110	86	63	492	555	561	37	176	213	185	609	3830	4439	3955
90 semester hours	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
60 semester hours	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30 semester hours	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
ELEMENTARY TOTAL	16	94	110	86	63	492	555	561	37	176	213	185	609	3830	4439	3955
HIGH SCHOOL																
Agriculture	2	...	2	2	3	...	3	3	3	...	3	16	22	...	22	31
Art	...	1	1	2	...	11	11	13	5	6	11	11	129	232	361	354
Commerce	3	6	9	9	61	39	100	85	12	22	34	30	132	239	371	283
English	12	10	22	33	25	78	103	109	15	11	26	26	121	161	282	268
Foreign Language	3	8	11	8	15	26	41	49	4	4	8	12	49	74	123	119
Home Economics	...	19	19	6	...	20	20	21	...	26	26	25	...	256	256	269
Industrial Arts	13	...	13	7	23	...	23	10	24	...	24	18	215	5	220	196
Journalism	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...
Library Science	...	...	...	...	...	4	4	9	...	...	...	...	7	53	60	44
Mathematics	7	8	15	16	11	27	38	42	8	2	10	7	73	50	123	94
Music	1	2	3	2	9	23	32	21	16	9	25	19	310	283	593	577
Physical Ed.--Men	...	...	...	1	57	...	57	43	59	...	59	45	332	...	332	280
Physical Ed.--Women	...	...	...	12	...	40	40	37	...	11	11	15	...	219	219	201
General Science	13	2	15	7	16	11	27	20	7	1	8	6	124	73	197	202
Biology	2	2	4	2	5	2	7	9	9	5	14	12	...	...	...	...
Chemistry	1	...	1	...	3	...	3	...	...	...	...	1	...	...	...	...
Physics	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Social Sciences	40	6	46	23	68	55	123	137	35	7	42	32	273	85	358	313
Speech	...	...	...	...	4	7	11	9	2	2	4	2	28	98	126	145
Other	...	...	...	...	...	6	6	15	4	...	4	5	4	64	68	67
HIGH SCHOOL TOTAL	98	64	162	130	300	349	649	632	203	106	309	287	1819	1892	3711	3443
GRAND TOTAL	114	158	272	216	363	841	1204	1193	240	282	522	472	2428	5722	8150	7398

Type of Preparation	All white institutions in NORTH CAROLINA				All Negro institutions in NORTH CAROLINA				All institutions in NORTH DAKOTA				All institutions in OHIO			
	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955
ELEMENTARY																
120 semester hours	52	678	730	702	96	488	584	543	13	66	79	79	124	1325	1449	1173
90 semester hours	...	...	...	...	...	...	...	...	...	4	4	...	...	...	...	...
60 semester hours	...	...	...	...	...	...	...	...	63	405	468	362	60	744	804	542
30 semester hours	...	...	...	...	...	...	...	...	66	409	475	404	...	...	...	...
ELEMENTARY TOTAL	52	678	730	702	96	488	584	543	142	884	1026	845	184	2069	2253	1715
HIGH SCHOOL																
Agriculture	37	...	37	45	24	...	24	23	15	...	15	19	18	...	18	3
Art	5	17	22	18	3	2	5	4	33	1	34	1	39	74	113	90
Commerce	57	130	187	163	6	70	76	94	10	15	25	43	66	119	185	147
English	69	162	231	192	9	28	37	50	...	25	25	39	83	199	282	214
Foreign Language	7	22	29	28	7	10	17	18	...	1	1	3	57	64	121	120
Home Economics	...	97	97	110	...	58	58	56	...	57	57	41	...	143	143	126
Industrial Arts	24	...	24	24	30	...	30	26	8	...	8	13	65	...	65	87
Journalism	...	...	...	...	...	...	...	...	1	...	1	...	1	1	2	3
Library Science	1	11	12	12	...	...	...	2	...	...	...	...	15	2	17	1
Mathematics	73	34	107	107	18	11	29	34	25	4	29	21	100	46	146	65
Music	23	40	63	70	16	7	23	33	18	16	34	21	134	146	280	215
Physical Ed.--Men	45	...	45	51	44	...	44	23	51	...	51	43	242	...	242	215
Physical Ed.--Women	...	117	117	131	...	32	32	30	...	20	20	17	...	164	164	134
General Science	44	16	60	54	10	17	27	18	14	2	16	11	126	12	138	70
Biology	36	21	57	41	40	17	57	50	5	4	9	3	88	58	146	103
Chemistry	1	2	3	4	6	3	9	10	3	...	3	2	25	9	34	42
Physics	...	...	...	...	1	...	1	...	...	...	...	...	18	6	24	18
Social Sciences	77	58	135	136	59	38	97	96	58	17	75	46	232	138	370	286
Speech	...	...	...	...	...	...	...	...	2	4	6	6	71	45	116	115
Other	13	29	42	27	10	5	15	10	6	...	6	5	43	80	123	60
HIGH SCHOOL TOTAL	512	756	1268	1213	283	298	581	577	249	166	415	334	1423	1306	2729	2114
GRAND TOTAL	564	1434	1998	1915	379	786	1165	1120	391	1050	1441	1179	1607	3375	4982	3829

APPENDIX A—Continued

Total Number of College and University Students Completing Certificate Requirements in the 48 States, Alaska, District of Columbia, Hawaii, and Puerto Rico, by Sex and by Major Field in 1956, and by Major Field in 1955

Type of Preparation	All institutions in OKLAHOMA				All institutions in OREGON				All institutions in PENNSYLVANIA				All institutions in PUERTO RICO			
	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955
ELEMENTARY																
120 semester hours	44	510	554	663	140	386	526	496	188	1395	1583	1600	110	238	348	333
90 semester hours	...	...	...	...	...	...	...	129	...	...	...	...	...	...	...	...
60 semester hours	...	...	...	...	...	...	...	...	...	...	...	...	124	466	590	471
30 semester hours	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
ELEMENTARY TOTAL	44	510	554	663	140	386	526	625	188	1395	1583	1600	234	704	938	804
HIGH SCHOOL																
Agriculture	74	...	74	70	18	...	18	12	43	1	44	26	...	...	...	...
Art	8	20	28	25	5	38	43	27	87	87	174	147	...	...	...	...
Commerce	82	133	215	193	7	10	17	25	112	187	299	260	...	7	7	8
English	32	97	129	100	20	37	57	50	146	253	399	376	7	10	17	19
Foreign Language	3	3	6	16	2	7	9	13	43	58	101	86	10	17	27	26
Home Economics	...	176	176	164	...	65	65	33	...	227	227	207	...	...	...	8
Industrial Arts	173	...	173	135	14	...	14	14	126	...	126	69	10	...	10	12
Journalism	...	...	...	1	...	1	1	2	...	...	...	...	...	...	...	...
Library Science	...	1	1	3	...	...	...	...	5	24	29	27	...	...	...	...
Mathematics	61	16	77	72	18	5	23	19	111	67	178	172	...	...	...	...
Music	46	65	111	119	36	24	60	45	145	182	327	266	...	...	...	1
Physical Ed.—Men	88	...	88	101	73	...	73	49	231	...	231	146	2	...	2	7
Physical Ed.—Women	...	26	26	12	...	35	35	26	...	152	152	124	...	3	3	3
General Science	43	8	51	39	41	16	57	38	131	35	166	133	1	5	6	6
Biology	25	3	28	32	6	9	15	9	57	31	88	108	1	...	1	1
Chemistry	6	1	7	5	3	1	4	6	29	21	44	47	...	...	...	...
Physics	...	...	...	1	2	...	2	1	21	10	31	7	...	...	...	...
Social Sciences	167	39	206	210	72	26	98	63	476	155	631	521	23	31	54	49
Speech	21	25	46	33	8	6	14	20	18	29	47	21	...	...	...	...
Other	1	5	6	9	2	4	6	12	101	78	179	103	...	...	...	...
HIGH SCHOOL TOTAL	830	618	1448	1340	327	284	611	464	1876	1597	3473	2846	54	73	127	140
GRAND TOTAL	874	1128	2002	2003	467	670	1137	1089	2064	2992	5056	4446	288	777	1065	944

Type of Preparation	All institutions in RHODE ISLAND				All white institutions in SOUTH CAROLINA				All Negro institutions in SOUTH CAROLINA				All institutions in SOUTH DAKOTA			
	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955
ELEMENTARY																
120 semester hours	3	96	99	83	19	256	275	245	34	315	349	437	11	78	89	101
90 semester hours	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
60 semester hours	...	...	...	...	...	...	...	...	...	...	...	...	22	358	380	305
30 semester hours	...	...	...	...	...	...	...	...	...	...	...	...	24	308	332	234
ELEMENTARY TOTAL	3	96	99	83	19	256	275	245	34	315	349	437	57	744	801	640
HIGH SCHOOL																
Agriculture	...	...	...	...	22	...	22	26	33	...	33	27	24	...	24	13
Art	2	10	12	12	1	9	10	8	2	5	7	3	2	2	4	6
Commerce	5	14	19	17	3	70	73	76	9	28	37	23	23	40	63	50
English	25	10	35	26	17	97	114	82	10	21	31	30	13	31	44	44
Foreign Language	1	1	2	...	4	14	18	8	1	4	5	...	...	3	3	1
Home Economics	...	11	11	6	...	43	43	62	...	24	24	35	...	40	40	28
Industrial Arts	...	...	...	...	15	...	15	11	20	...	20	13	19	...	19	13
Journalism	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Library Science	...	...	...	...	...	2	2	3	...	12	12	17	...	...	...	...
Mathematics	5	3	8	7	12	13	25	26	14	14	28	10	11	6	17	18
Music	...	...	...	1	3	38	41	56	7	6	13	7	8	16	24	36
Physical Ed.—Men	6	...	6	5	57	...	57	55	27	...	27	29	33	...	33	43
Physical Ed.—Women	...	...	...	...	...	26	26	30	...	13	13	7	...	7	7	16
General Science	5	2	7	6	22	9	31	17	3	3	6	2	23	3	26	9
Biology	1	2	3	3	1	12	13	17	23	18	41	41	2	1	3	7
Chemistry	...	...	...	...	2	6	8	2	9	3	12	4	3	1	4	3
Physics	...	...	...	6	1	...	1	...	...	...	...	...	1	...	1	...
Social Sciences	26	5	31	33	63	42	105	91	57	28	85	43	51	6	57	46
Speech	...	...	...	...	...	3	3	3	...	...	...	...	10	2	12	9
Other	...	...	...	...	...	...	...	...	4	...	4	4	...	1	1	40
HIGH SCHOOL TOTAL	76	58	134	122	223	384	607	573	219	179	398	295	223	159	382	383
GRAND TOTAL	79	154	233	205	242	640	882	818	253	494	747	732	280	903	1183	1023

APPENDIX A—Continued

Total Number of College and University Students Completing Certificate Requirements in the 48 States, Alaska, District of Columbia, Hawaii, and Puerto Rico, by Sex and by Major Field in 1956, and by Major Field in 1955

Type of Preparation	All institutions in TENNESSEE				All institutions in TEXAS				All institutions in UTAH				All institutions in VERMONT			
	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955
ELEMENTARY																
120 semester hours	85	686	771	708	134	1749	1883	1808	74	426	500	460	32	105	137	126
90 semester hours	...	...	...	...	26	289	315	319	...	...	...	...	...	...	...	...
60 semester hours	...	...	...	...	49	275	324	354	...	...	...	...	...	...	...	...
30 semester hours	...	...	...	...	63	510	573	743	...	...	...	...	...	...	...	...
ELEMENTARY TOTAL	85	686	771	708	272	2823	3095	3224	74	426	500	460	32	105	137	126
HIGH SCHOOL																
Agriculture	59	...	59	40	303	1	304	253	13	...	13	15	4	...	4	5
Art	7	16	23	17	27	64	91	81	5	10	15	12	...	...	...	...
Commerce	82	140	222	154	155	316	471	357	9	37	46	42	3	2	5	8
English	52	146	198	200	104	312	416	447	11	25	36	28	14	8	22	16
Foreign Language	7	32	39	34	27	58	85	73	6	5	11	7	1	8	9	8
Home Economics	1	172	173	148	...	332	332	302	...	60	60	46	11	...	11	11
Industrial Arts	96	1	97	63	118	37	155	139	37	...	37	23	...	...	...	...
Journalism	...	...	...	...	18	35	53	45	...	...	...	...	...	...	...	...
Library Science	...	2	2	4	...	54	54	44	...	...	...	5	...	...	...	...
Mathematics	47	30	77	51	113	73	186	152	10	...	10	9	1	2	3	8
Music	41	87	128	105	107	191	298	364	16	6	22	23	1	3	4	2
Physical Ed.—Men	183	...	183	146	468	...	468	393	67	...	67	43	...	...	...	2
Physical Ed.—Women	...	110	110	87	...	197	197	173	...	50	50	39	...	...	...	...
General Science	10	11	21	54	84	32	116	95	21	3	24	20	2	1	3	6
Biology	56	32	88	65	93	35	128	116	17	...	17	11	1	...	1	...
Chemistry	33	5	38	22	40	14	54	64	3	...	3	5	...	...	...	1
Physics	1	...	1	2	13	2	15	22	1	...	1	5	...	...	...	...
Social Sciences	177	124	301	324	323	238	561	501	74	15	89	90	19	5	24	19
Speech	11	7	18	16	40	83	123	122	11	6	17	14	...	1	1	2
Other	27	40	67	43	64	42	106	109	2	...	2	17	7	8	15	11
HIGH SCHOOL TOTAL	890	955	1845	1575	2097	2116	4213	3852	303	217	520	454	64	38	102	99
GRAND TOTAL	975	1641	2616	2283	2369	4939	7308	7076	377	643	1020	914	96	143	239	225

Type of Preparation	All white institutions in VIRGINIA				All Negro institutions in VIRGINIA				All institutions in WASHINGTON				All white institutions in WEST VIRGINIA			
	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955
ELEMENTARY																
120 semester hours	8	379	387	340	5	127	132	149	216	552	768	784	51	246	297	312
90 semester hours	...	...	...	...	...	...	...	...	...	...	...	...	2	40	42	56
60 semester hours	...	...	...	...	...	...	...	...	...	...	...	...	9	63	72	130
30 semester hours	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
ELEMENTARY TOTAL	8	379	387	340	5	127	132	149	216	552	768	784	62	349	411	498
HIGH SCHOOL																
Agriculture	20	...	20	15	9	...	9	14	18	...	18	7	25	...	25	15
Art	3	20	23	27	3	7	10	10	22	21	43	31	8	8	16	12
Commerce	18	56	74	80	2	25	27	15	11	12	23	27	23	31	54	38
English	21	64	85	50	3	12	15	31	46	41	87	65	15	45	60	59
Foreign Language	7	17	24	32	1	...	1	1	9	15	24	16	1	9	10	8
Home Economics	...	58	58	45	...	31	31	24	...	90	90	68	...	64	64	76
Industrial Arts	6	...	6	4	36	2	38	26	49	...	49	35	20	...	20	22
Journalism	...	...	...	...	...	...	...	...	3	3	6	2	...	...	...	...
Library Science	...	...	...	7	...	6	6	4	...	...	...	1	1	1	2	3
Mathematics	15	18	33	26	5	13	18	9	24	4	28	24	21	9	30	15
Music	8	30	38	42	13	18	31	30	37	35	72	66	17	21	38	42
Physical Ed.—Men	33	...	33	38	23	...	23	10	88	...	88	63	120	...	120	86
Physical Ed.—Women	...	24	24	52	...	31	31	9	...	45	45	28	...	37	37	31
General Science	12	2	14	11	16	6	22	24	22	6	28	25	4	2	6	6
Biology	10	10	20	17	22	2	24	8	18	5	23	19	19	11	30	36
Chemistry	7	3	10	20	7	1	8	1	9	1	10	5	...	...	...	...
Physics	2	...	2	5	1	...	1	...	7	1	8	1	9	1	10	9
Social Sciences	37	64	101	106	20	11	31	36	153	52	205	130	56	18	74	60
Speech	...	...	...	5	1	7	8	7	11	10	21	8	3	4	7	6
Other	...	...	...	...	...	...	...	...	31	14	45	35	15	23	38	34
HIGH SCHOOL TOTAL	199	366	565	582	162	172	334	259	558	355	913	656	357	284	641	558
GRAND TOTAL	207	745	952	922	167	299	466	408	774	907	1681	1440	419	633	1052	1056

APPENDIX A—Concluded

Type of Preparation	All Negro Institutions in WEST VIRGINIA				All Institutions in WISCONSIN				All Institutions in WYOMING				Type of Preparation
	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	Men 1956	Women 1956	Total 1956	1955	
ELEMENTARY													ELEMENTARY
120 semester hours	4	31	35	45	159	690	849	929	1	28	29	15	120 semester hours
90 semester hours	...	2	2	2	1	41	42	62	1	1	2	6	90 semester hours
60 semester hours	...	2	2	...	135	703	838	759	4	48	52	40	60 semester hours
30 semester hours	...	...	...	...	...	...	...	...	...	...	...	...	30 semester hours
ELEMENTARY TOTAL	4	35	39	47	295	1434	1729	1750	6	77	83	61	ELEMENTARY TOTAL
HIGH SCHOOL													HIGH SCHOOL
Agriculture	2	...	2	3	74	...	74	58	14	...	14	10	Agriculture
Art	1	2	3	3	37	45	82	70	2	3	5	...	Art
Commerce	3	10	13	11	36	56	92	70	...	6	6	2	Commerce
English	1	3	4	2	59	129	188	155	1	6	7	2	English
Foreign Language	1	4	5	3	9	28	37	32	...	...	...	...	Foreign Language
Home Economics	...	11	11	7	...	141	141	117	...	17	17	10	Home Economics
Industrial Arts	2	...	2	6	89	...	89	58	5	...	5	3	Industrial Arts
Journalism	...	...	...	...	...	...	...	2	...	...	...	...	Journalism
Library Science	...	...	...	...	...	1	1	1	...	...	...	...	Library Science
Mathematics	3	2	5	4	40	19	59	53	2	4	6	...	Mathematics
Music	8	2	10	9	53	56	109	84	2	4	6	3	Music
Physical Ed.—Men	19	...	19	26	70	...	70	38	29	...	29	12	Physical Ed.—Men
Physical Ed.—Women	...	5	5	9	...	70	70	52	...	2	2	3	Physical Ed.—Women
General Science	...	...	...	...	29	9	38	30	1	...	1	1	General Science
Biology	2	...	2	5	61	22	83	49	...	1	1	...	Biology
Chemistry	...	...	...	...	33	5	38	22	1	...	1	...	Chemistry
Physics	...	...	...	1	13	1	14	13	...	...	...	...	Physics
Social Sciences	9	9	18	10	155	68	223	187	2	5	7	3	Social Sciences
Speech	...	...	...	...	19	75	94	71	...	...	...	...	Speech
Other	3	1	4	7	10	5	15	12	...	...	...	...	Other
HIGH SCHOOL TOTAL	54	49	103	106	787	730	1517	1174	59	48	107	49	HIGH SCHOOL TOTAL
GRAND TOTAL	58	84	142	153	1082	2164	3246	2924	65	125	190	110	GRAND TOTAL

APPENDIX B

THE FOLLOWING tables show the demand for teachers in September, 1955, in each of the states participating in this part of the study. In interpreting the contents of these tables the reader should keep in mind the established definition of "demand" for teachers as stated in Section II of this report.

Each table shows not only the number of newly employed high school teachers but it also indicates the nature of the teaching assignment. Lines 1-20 and columns 1-20 are devoted to the portrayal of this information.

Line 22 shows the number of newly employed elementary school teachers and, where possible, the assignment of these new teachers in one-room rural schools, the lower or uppper grades.

The column at the extreme right (beyond the double vertical line) shows the number of members of the 1955 class who were prepared in the colleges of the state to enter teaching. It is not intended to imply that the graduates listed in this "supply" column actually filled the positions and thus met the "demands" reported in the other part of the table.

An explanation of the way in which new high school teachers are entered in lines 1-20 and columns 1-20 is in order. Let us suppose that the new teacher is assigned to teach in just one field, let us say English. A tally would be entered on line 4 in column 4, both of which are designated "English." Now let us suppose the new teacher is assigned three classes in English (a major assignment) and one class in mathematics (a minor assignment). The tally would then be entered on line 4, but in column 10. Again, let us

suppose the new teacher is assigned three classes in mathematics (a major assignment) and one class in English (a minor assignment). The tally would be entered on line 10 in column 4. The new teacher is always entered on the line bearing the name of the field in which all or a major part of the teaching is to be done. This entry is made in the column bearing the name of the field in which a minor part of the teaching is to be done. No new teacher is tallied more than once.

Reference to Table I (the demand for teachers in Alabama) will illustrate this procedure. On line 1 in the first column appears the figure 23. This indicates the number of new teachers devoting full time to the teaching of agriculture. On line 1 in the fourth column is reported one new teacher with a major assignment in agriculture and a minor assignment in English; on line 1 in the tenth column is reported one new teacher with a major assignment in agriculture and a minor assignment in mathematics. On line 1 in the column headed "Total Demand" the figure 31 indicates the number of new teachers in Alabama with full or major assignments in agriculture. On line 1 at the extreme right in the column headed "Total Supply" the figure 63 indicates the number of persons graduating in 1955 in Alabama colleges with preparation to teach agriculture.

These tables give a realistic picture of the employment of new teachers in a state. They do not show teachers who changed positions. The purpose of these tables is to show both the number of positions filled by new teachers and the specific nature of the teaching assignments. This record, if compiled for several consecutive years, will provide an accurate basis for the projection of future trends.

Number of New Elementary and High School Teachers Who Did Not Teach the Preceding School Year

TABLE I. Demand for Teachers—Alabama

STATE	MINOR ASSIGNMENT																					
ALABAMA 1955-56 / MAJOR ASSIGNMENT	AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	23			1						1	2			1	1			2			31	63
ART		7		3					1				1					2			14	12
COMMERCE	9		53	6			1				1	1						5			76	82
ENGLISH	8	3	5	78	3				1	10	6		4	12			1	61	5	1	198	116
FOREIGN LANGUAGE				4	7													1			12	27
HOME ECONOMICS	5			1		46							1	5				2			60	146
INDUSTRIAL ARTS				1			9					1		2							13	55
JOURNALISM				1																	1	0
LIBRARY SCIENCE	2		1	4					21									4			32	9
MATHEMATICS	7	1		9	1				2	70	1	5	3	32	3	1		8			143	55
MUSIC	6			5						1	43	1	3	2				8			67	45
PHYS. ED.—MEN	7			1			2			6		34	3	7	3			18		3	84	130
PHYS. ED.—WOMEN	4			5					2	2	1	1	24	4	1			4			48	50
GENERAL SCIENCE	8	1		5						20	1	10	1	54	4		2	7			113	38
BIOLOGY				1										3	6	2	1				13	34
CHEMISTRY	1									3						11	3				18	16
PHYSICS	1									1						2	5				9	1
SOCIAL STUDIES	10		1	31	2				1	8	4	11	3	8			1	70	1		151	202
SPEECH				1														2	5		8	13
OTHER	6		1	8																25	40	
HIGH SCHOOL TOTAL																					1131	1094
ELEMENTARY SCHOOL TOTAL	ONE ROOM 12								LOWER GRADES 547			UPPER GRADES 384									943	615

Number of New Elementary and High School Teachers Who Did Not Teach the Preceding School Year

TABLE II. Demand for Teachers—Arizona

STATE: ARIZONA 1955-56	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
MAJOR ASSIGNMENT: AGRICULTURE	1			2			1														2	2
ART		4		2																	6	11
COMMERCE			13	1			1			1				1							17	16
ENGLISH				11	2			2		1			2			1		4	2		25	29
FOREIGN LANGUAGE			1	1	4													1			7	14
HOME ECONOMICS				2		9			1					1							13	21
INDUSTRIAL ARTS				2			7			1		2		1							13	16
JOURNALISM				4		1		1										1			7	1
LIBRARY SCIENCE									3				1								4	
MATHEMATICS			2	1			2			5								1			11	4
MUSIC											8										8	17
PHYS. ED.—MEN				1			3					5						2			11	35
PHYS. ED.—WOMEN													9								9	17
GENERAL SCIENCE										1		1		2	1						5	5
BIOLOGY															3						3	9
CHEMISTRY														2		1					3	1
PHYSICS										1				1		1					3	4
SOCIAL STUDIES				3		1		1				2	1	1	1			11			21	29
SPEECH				1															1		2	6
OTHER																						
HIGH SCHOOL TOTAL																					170	231
ELEMENTARY SCHOOL TOTAL				ONE ROOM 4				LOWER GRADES 228				UPPER GRADES 179									411	345

TABLE III. Demand for Teachers—California

STATE: CALIFORNIA 1955-56	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
MAJOR ASSIGNMENT: AGRICULTURE	32																				32	86
ART		94																			94	254
COMMERCE			61																		61	260
ENGLISH																						327
FOREIGN LANGUAGE																						116
HOME ECONOMICS						198															198	191
INDUSTRIAL ARTS							153														153	222
JOURNALISM																						
LIBRARY SCIENCE																						17
MATHEMATICS																						88
MUSIC											128										128	312
PHYS. ED.—MEN												103									103	402
PHYS. ED.—WOMEN													171								171	186
GENERAL SCIENCE																						254
BIOLOGY																						
CHEMISTRY																						
PHYSICS																						
SOCIAL STUDIES																						674
SPEECH																			8		8	181
OTHER																				4150	4150	634
HIGH SCHOOL TOTAL																					5098	4204
ELEMENTARY SCHOOL TOTAL				ONE ROOM				LOWER GRADES				UPPER GRADES									7789	4157

Note: In the line and column designated "other" are included the new teachers of the general academic subjects (such as English, foreign languages, mathematics, science, and social studies) plus new teachers in certain specialized fields, because these new teachers cannot be reported separately by teaching field. The figures shown in this table are not included in composite table.

TABLE IV. Demand for Teachers—Colorado

STATE: COLORADO 1955-56	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
MAJOR ASSIGNMENT: AGRICULTURE	5						1							2	1	1					10	15
ART		9		1																	10	54
COMMERCE			37	1			1					1									40	97
ENGLISH		4	1	42	4			2	1	1	4	1	2	1				28	4	1	96	101
FOREIGN LANGUAGE				4	3					1								1			8	14
HOME ECONOMICS				2		18						1	1	3				1		1	26	39
INDUSTRIAL ARTS			1				19			2		5		2		1					30	76
JOURNALISM																					0	2
LIBRARY SCIENCE									4												4	22
MATHEMATICS										22		2	1	13		1	1	2			42	50
MUSIC		1	1	2							30							2			36	88
PHYS. ED.—MEN				1			1			3		7	8		1			3			26	109
PHYS. ED.—WOMEN			2									3	5	1							11	53
GENERAL SCIENCE				3					2	4	1	6	6	23	1			2		1	47	20
BIOLOGY										1		1			2						4	42
CHEMISTRY																1					1	11
PHYSICS													1								1	5
SOCIAL STUDIES		1	2	2	2						4	15	1	4				38		2	71	155
SPEECH				1															1		2	25
OTHER							1													34	35	62
HIGH SCHOOL TOTAL																					500	1037
ELEMENTARY SCHOOL TOTAL				ONE ROOM 21.8				LOWER GRADES				UPPER GRADES									543	744

Number of New Elementary and High School Teachers Who Did Not Teach the Preceding School Year

TABLE V. Demand for Teachers—Connecticut

STATE: CONNECTICUT 1955-56	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
MAJOR ASSIGNMENT: AGRICULTURE	1																				1	1
ART		13					1														14	11
COMMERCE			17																		17	25
ENGLISH				38	6				1	1		1		2				30			79	55
FOREIGN LANGUAGE				5	10					1											16	26
HOME ECONOMICS						29				1											30	19
INDUSTRIAL ARTS							19			1					1						21	21
JOURNALISM																						
LIBRARY SCIENCE									3												3	1
MATHEMATICS			2							22				7		1					32	20
MUSIC											10										10	29
PHYS. ED.—MEN												9		1				1			11	38
PHYS. ED.—WOMEN													13	2							15	21
GENERAL SCIENCE		1		3						14				23	1		1				43	9
BIOLOGY														2	1/2	1	1				5	9
CHEMISTRY										1					2						3	5
PHYSICS																1					1	3
SOCIAL STUDIES				6	1		1							1				24			33	68
SPEECH																						2
OTHER																				6	6	9
HIGH SCHOOL TOTAL																					340	368
ELEMENTARY SCHOOL TOTAL				ONE ROOM 1					LOWER GRADES 826			UPPER GRADES 170									997	420

TABLE VI. Demand for Teachers—Delaware

STATE: DELAWARE 1955-56	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
MAJOR ASSIGNMENT: AGRICULTURE	1						1														2	2
ART		1																			1	1
COMMERCE			9																		9	1
ENGLISH				11	1													8		2	22	5
FOREIGN LANGUAGE				1	5																6	3
HOME ECONOMICS						7								1							8	7
INDUSTRIAL ARTS																						
JOURNALISM																						
LIBRARY SCIENCE									2												2	
MATHEMATICS			1							7				1				2			11	3
MUSIC											4							1			5	1
PHYS. ED.—MEN												6									6	7
PHYS. ED.—WOMEN													9								9	7
GENERAL SCIENCE										2				6						1	9	
BIOLOGY															1						1	2
CHEMISTRY																						
PHYSICS																						
SOCIAL STUDIES				2														6		1	9	4
SPEECH																						
OTHER																				3	3	
HIGH SCHOOL TOTAL																					103	43
ELEMENTARY SCHOOL TOTAL				ONE ROOM					LOWER GRADES 84			UPPER GRADES 75									159	40

TABLE VII. Demand for Teachers—District of Columbia

STATE: DISTRICT OF COLUMBIA 1955-56	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
MAJOR ASSIGNMENT: AGRICULTURE																						2
ART		6																			6	5
COMMERCE			5																		5	8
ENGLISH			3	6														6			15	23
FOREIGN LANGUAGE				1	1													1			3	8
HOME ECONOMICS						1															1	7
INDUSTRIAL ARTS							3			1											4	
JOURNALISM				1																	1	
LIBRARY SCIENCE									3												3	
MATHEMATICS				1						6											7	11
MUSIC				1							4										5	14
PHYS. ED.—MEN												3									3	12
PHYS. ED.—WOMEN													3								3	10
GENERAL SCIENCE										1				4				2		1	8	13
BIOLOGY															2						2	10
CHEMISTRY																						
PHYSICS																						1
SOCIAL STUDIES				1										2				5			8	36
SPEECH																						13
OTHER				1																18	19	9
HIGH SCHOOL TOTAL																					93	182
ELEMENTARY SCHOOL TOTAL				ONE ROOM					LOWER GRADES			UPPER GRADES									126	94

Number of New Elementary and High School Teachers Who Did Not Teach the Preceding School Year

TABLE VIII. Demand for Teachers—Hawaii

STATE: HAWAII 1955-56 / MAJOR ASSIGNMENT	AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	4																				4	4
ART																						
COMMERCE			3																		3	2
ENGLISH				16																	16	8
FOREIGN LANGUAGE																						
HOME ECONOMICS						6															6	11
INDUSTRIAL ARTS							5														5	
JOURNALISM																						
LIBRARY SCIENCE																						
MATHEMATICS										8											8	5
MUSIC											7										7	3
PHYS. ED.—MEN												6									6	1
PHYS. ED.—WOMEN													6								6	2
GENERAL SCIENCE														3							3	3
BIOLOGY																						
CHEMISTRY																1					1	
PHYSICS																	1				1	
SOCIAL STUDIES																		13			13	10
SPEECH																			2		2	1
OTHER																				4	4	
HIGH SCHOOL TOTAL																					85	50
ELEMENTARY SCHOOL TOTAL				ONE ROOM				LOWER GRADES				UPPER GRADES									309	97

TABLE IX. Demand for Teachers—Illinois

STATE: ILLINOIS 1955-56 / MAJOR ASSIGNMENT	AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	30									3						6	3	2			44	51
ART		42		8							6			6							62	97
COMMERCE			118	3	8		6	10													145	225
ENGLISH				258					6		4								12		280	260
FOREIGN LANGUAGE				16	39																55	74
HOME ECONOMICS				6		168										14	6				194	159
INDUSTRIAL ARTS							90			7						3					100	100
JOURNALISM				4	3			9													16	3
LIBRARY SCIENCE				6					48												54	25
MATHEMATICS										83						12	8				103	126
MUSIC		14		6							87										107	287
PHYS. ED.—MEN												100			4	3	2				109	247
PHYS. ED.—WOMEN													93	4		1	4				102	159
GENERAL SCIENCE				6										81				3			90	34
BIOLOGY				3						4					68		1				76	69
CHEMISTRY												5				75	5	1			86	35
PHYSICS																1	43	4			48	13
SOCIAL STUDIES				15														196			211	351
SPEECH				7	1														62		70	78
OTHER																				12	12	83
HIGH SCHOOL TOTAL																					1964	2456
ELEMENTARY SCHOOL TOTAL				ONE ROOM	85			LOWER GRADES	1625			UPPER GRADES	870								2580	2101

TABLE X. Demand for Teachers—Indiana

STATE: INDIANA 1955-56 / MAJOR ASSIGNMENT	AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	11													4	6	3					24	28
ART		45	1	2			2				3							2	1	1	57	64
COMMERCE	2	1	54	6					3	4	1	7	8					6	2	1	95	116
ENGLISH		1	1	108	31	3		5	11	3	5		8		1			15	7	1	200	174
FOREIGN LANGUAGE				7	10	1							1					4		1	24	45
HOME ECONOMICS			3	3		69							20	1	7					4	107	101
INDUSTRIAL ARTS							39			3		5	2		1			6		2	58	57
JOURNALISM				1																	1	5
LIBRARY SCIENCE			1	4					13							1					19	15
MATHEMATICS	2		1	3			1			46	1	9	2	9	1	8	9	9			101	50
MUSIC		4	1	8	1						95		1					2	1	5	118	128
PHYS. ED.—MEN		1	2	1			2			2		27		2	2			17		3	59	234
PHYS. ED.—WOMEN	1		1	3		1			1	3	2		24	2	1			3			42	55
GENERAL SCIENCE	1									4		1		9	1			1			17	41
BIOLOGY	2	1		2		2			1	1		3	1	2	13	1		1			30	33
CHEMISTRY										4		1	1		2	3	1	1			13	30
PHYSICS				1		1				2							3	1			8	13
SOCIAL STUDIES	3	2	1	24	1					2	1	18	3	2	1	1		53	2	4	118	182
SPEECH			1					1										1	8	1	12	65
OTHER				1		1	2												1	27	32	41
HIGH SCHOOL TOTAL																					1135	1477
ELEMENTARY SCHOOL TOTAL				ONE ROOM	18			LOWER GRADES	944			UPPER GRADES	510								1472	702

Number of New Elementary and High School Teachers Who Did Not Teach the Preceding School Year

TABLE XI. Demand for Teachers—Kansas

STATE: KANSAS 1955-56	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	20						2			1				2		2				1	28	22
ART		23	1	1														1		1	27	26
COMMERCE			42	6		5	1	1		7		4	3	2				3			74	70
ENGLISH		1	2	46	9	4		8	10		2		1	4				20	21		128	103
FOREIGN LANGUAGE					1													1			2	12
HOME ECONOMICS			2	5		51			2	2			5	6	2	1		5			81	102
INDUSTRIAL ARTS				2			24			2		6	1	2	3		1	7		2	50	56
JOURNALISM								3													3	1
LIBRARY SCIENCE			1	2					4										1		8	4
MATHEMATICS			1	4	1		3		1	35				10	2	1	6	2			66	40
MUSIC			1	9	1						105			3						1	120	115
PHYS. ED.—MEN							4			1		10		4	3		1	11		2	36	129
PHYS. ED.—WOMEN			1	2		1				1			17	2	2			2			28	52
GENERAL SCIENCE			2	1		2				10		3		3	10	2	1	5		2	41	17
BIOLOGY					1					1			1	4	4		3	1			15	28
CHEMISTRY										1						2					3	8
PHYSICS										1					1		1				3	2
SOCIAL STUDIES				8			2		5	2		12		4	1			44	1	6	85	138
SPEECH				3														2	2		7	19
OTHER						1			1	3	2	2		3	1			1		13	27	15
HIGH SCHOOL TOTAL																					832	965
ELEMENTARY SCHOOL TOTAL	ONE ROOM 221			LOWER GRADES and UPPER GRADES 1449																	1670	573

TABLE XII. Demand for Teachers—Kentucky

STATE: KENTUCKY 1955-56	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	11														2					1	14	39
ART		8						1		1											10	27
COMMERCE			82	3						1	1							6			93	117
ENGLISH				95	1				3	3	1			2	1			14	3	3	126	92
FOREIGN LANGUAGE					8																8	19
HOME ECONOMICS						57			1					2				3		1	64	83
INDUSTRIAL ARTS	1						20					1									22	41
JOURNALISM																					0	0
LIBRARY SCIENCE				3			1		15	1											20	5
MATHEMATICS	1		1							39	1	1		5	1	1		6		2	58	25
MUSIC				4		1					69	2	1	1					1	1	80	97
PHYS. ED.—MEN										2		42	5	6	3			5		3	64	94
PHYS. ED.—WOMEN				2				1					21					1		4	29	26
GENERAL SCIENCE		1		2						9		2	1	22	4			5		1	47	18
BIOLOGY										1				2	25		1			1	30	25
CHEMISTRY			1					1							5	14					21	8
PHYSICS																	1				1	2
SOCIAL STUDIES			1	11	1					2		2		3				87	2	1	110	180
SPEECH				1															4		5	10
OTHER												1								74	75	21
HIGH SCHOOL TOTAL																					877	929
ELEMENTARY SCHOOL TOTAL	ONE ROOM 383			LOWER GRADES 628								UPPER GRADES 483									1494	641

TABLE XIII. Demand for Teachers—Maryland

STATE: MARYLAND 1955-56	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	3									1				5							9	11
ART		45		1														1		1	48	21
COMMERCE		2	49	3						2								1			57	30
ENGLISH			2	58	3	1			1		1			1				50		2	119	47
FOREIGN LANGUAGE				5	8										1			1			15	14
HOME ECONOMICS				1		53								1							55	25
INDUSTRIAL ARTS							37			1											38	16
JOURNALISM																						
LIBRARY SCIENCE				1					4									1			6	
MATHEMATICS			4	3						60	1	1		30				1		5	105	23
MUSIC				2						2	52		1					2			59	45
PHYS. ED.—MEN												22		3	1			3		1	30	38
PHYS. ED.—WOMEN													47	1	1			1		1	51	22
GENERAL SCIENCE	1									13			2	33				3			52	16
BIOLOGY				1									1	1	5		1	1			10	6
CHEMISTRY															2	1	2			1	6	2
PHYSICS														1	1						2	
SOCIAL STUDIES				18						1	1			1	1			62		4	88	94
SPEECH																				1	1	
OTHER		1	1	11	3				1	19		1	1	7				8		152	205	86
HIGH SCHOOL TOTAL																					956	496
ELEMENTARY SCHOOL TOTAL	ONE ROOM			LOWER GRADES 678								UPPER GRADES 308				OTHER 104					1090	361

Number of New Elementary and High School Teachers Who Did Not Teach the Preceding School Year

TABLE XIV. Demand for Teachers—Mississippi (White)

STATE: MISSISSIPPI 1955-56 — MAJOR ASSIGNMENT	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	28																				28	35
ART		3																			3	10
COMMERCE			75																		75	103
ENGLISH				108																	108	91
FOREIGN LANGUAGE					10																10	5
HOME ECONOMICS						60															60	77
INDUSTRIAL ARTS							2														2	17
JOURNALISM								0													0	2
LIBRARY SCIENCE									8												8	14
MATHEMATICS										74											74	30
MUSIC											64										64	31
PHYS. ED.—MEN												40									40	86
PHYS. ED.—WOMEN													9								9	23
GENERAL SCIENCE														68							68	32
BIOLOGY																						4
CHEMISTRY																						3
PHYSICS																						
SOCIAL STUDIES																		89			89	126
SPEECH																						11
OTHER																				52	52	5
HIGH SCHOOL TOTAL																					690	705
ELEMENTARY SCHOOL TOTAL				ONE ROOM				LOWER GRADES				UPPER GRADES									598	299

In Mississippi it was not possible to identify the minor teaching assignments of new high school teachers, and thus the figures shown in this table are not included in composite table.

TABLE XV. Demand for Teachers—Mississippi (Negro)

STATE: MISSISSIPPI 1955-56 — MAJOR ASSIGNMENT	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	11																				11	13
ART		0																			0	4
COMMERCE			10																		10	20
ENGLISH				44																	44	35
FOREIGN LANGUAGE					1																1	0
HOME ECONOMICS						22															22	27
INDUSTRIAL ARTS							0														0	7
JOURNALISM								0														
LIBRARY SCIENCE									0													
MATHEMATICS										31											31	9
MUSIC											12										12	3
PHYS. ED.—MEN												5									5	16
PHYS. ED.—WOMEN													4								4	6
GENERAL SCIENCE														25							25	19
BIOLOGY																						5
CHEMISTRY																						1
PHYSICS																	0					
SOCIAL STUDIES																		41			41	42
SPEECH																						
OTHER																				19	19	
HIGH SCHOOL TOTAL																					225	207
ELEMENTARY SCHOOL TOTAL				ONE ROOM				LOWER GRADES				UPPER GRADES									321	122

In Mississippi it was not possible to identify the minor teaching assignments of new high school teachers, and thus the figures shown in this table are not included in composite table.

TABLE XVI. Demand for Teachers—Missouri

STATE: MISSOURI 1955-56 — MAJOR ASSIGNMENT	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	47						1			1		1		4							53	14
ART		47	1	3								2						5			58	43
COMMERCE			144	3						1		4	1	1	1						155	85
ENGLISH		1	1	282	8	1		11		1	8		1	5				53	23		395	106
FOREIGN LANGUAGE				8	39			1		1								2			51	13
HOME ECONOMICS		3		4		151				1	2			5	4			1			171	78
INDUSTRIAL ARTS		1					86			6	1	7			1			3		5	110	33
JOURNALISM			1	1				10													12	4
LIBRARY SCIENCE				3					23												26	1
MATHEMATICS		1	2	7			3			188		2		24	3	1	3	6			240	34
MUSIC			1	7							132							1			141	100
PHYS. ED.—MEN			1	1			2			4		100		4	4			12		5	133	108
PHYS. ED.—WOMEN				1									44					1	1		47	51
GENERAL SCIENCE							2			20		7	1	132	10	1	2	4			182	27
BIOLOGY				1		1				1		4		8	39			4			58	24
CHEMISTRY										3				2	3	17	3				28	6
PHYSICS										1				1	1	2	17				22	6
SOCIAL STUDIES	1	1	3	25					1	9		27		6				345	2	4	424	148
SPEECH			1	9				1											28		39	24
OTHER					1															134	135	5
HIGH SCHOOL TOTAL																					2480	910
ELEMENTARY SCHOOL TOTAL				ONE ROOM		565		LOWER GRADES		807		UPPER GRADES		715							2087	1039

Number of New Elementary and High School Teachers Who Did Not Teach the Preceding School Year

TABLE XVII. Demand for Teachers—Montana

STATE: MONTANA 1955-56	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	1																				1	13
ART		3	1		1																5	13
COMMERCE			14	2				1					1	1		2					21	36
ENGLISH			1	9	2			1	1	1	1							8	1		25	28
FOREIGN LANGUAGE												1									1	2
HOME ECONOMICS		1	1	2		8							1	1							14	31
INDUSTRIAL ARTS							2			2											4	18
JOURNALISM																					0	
LIBRARY SCIENCE																		1			1	
MATHEMATICS				1			2			3	1	1		2	1	3	2				16	15
MUSIC			1	1							5		1								8	15
PHYS. ED.—MEN										1				1	2	1					5	30
PHYS. ED.—WOMEN													2					1			3	9
GENERAL SCIENCE															2			1			3	10
BIOLOGY													1		1	1	1				4	20
CHEMISTRY										1											1	5
PHYSICS										1											1	
SOCIAL STUDIES			5	1	1				1		1	2	1	1			1	3		1	18	27
SPEECH																						9
OTHER																		1			1	
HIGH SCHOOL TOTAL																					132	281
ELEMENTARY SCHOOL TOTAL				ONE ROOM 60			LOWER GRADES 116				UPPER GRADES 75										251	109

MAJOR ASSIGNMENT

TABLE XVIII. Demand for Teachers—Nebraska

STATE: NEBRASKA 1955-56	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	15			1			1														17	19
ART		4																			4	12
COMMERCE			29	5			2	1										5			42	60
ENGLISH			3	35				3	1		2	1	2					4		1	52	57
FOREIGN LANGUAGE					1																1	12
HOME ECONOMICS						24				1			1	3	1			2			32	68
INDUSTRIAL ARTS			1	1			12			2		1			1	2		2			22	37
JOURNALISM																						
LIBRARY SCIENCE									1												1	
MATHEMATICS				4			2			21				3	2	2	4	3			41	31
MUSIC				1							56				1			2			60	56
PHYS. ED.—MEN										1		7			2			1			11	64
PHYS. ED.—WOMEN						1							6								7	13
GENERAL SCIENCE						1	2			5		2		2	8		1				21	7
BIOLOGY							1							2	3	1	1				8	17
CHEMISTRY																	1				1	9
PHYSICS															1						1	4
SOCIAL STUDIES			2	11		2	3			2		5		2	5			35	1	1	69	80
SPEECH																						18
OTHER																				1	1	20
HIGH SCHOOL TOTAL																					391	564
ELEMENTARY SCHOOL TOTAL				ONE ROOM			LOWER GRADES				UPPER GRADES										1271	374

MAJOR ASSIGNMENT

TABLE XIX. Demand for Teachers—Nevada

STATE: NEVADA 1955-56	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	3						1														4	1
ART		1																1			2	
COMMERCE			6										1								7	2
ENGLISH			1	9	5								2	1				8	1	2	29	6
FOREIGN LANGUAGE				1	1																2	2
HOME ECONOMICS			3			6								1							10	5
INDUSTRIAL ARTS							5														5	
JOURNALISM																						1
LIBRARY SCIENCE									1												1	1
MATHEMATICS										1		1		2							4	3
MUSIC											1	1						1			3	1
PHYS. ED.—MEN																		1			1	6
PHYS. ED.—WOMEN													1							1	2	6
GENERAL SCIENCE										1									1		2	1
BIOLOGY															1						1	2
CHEMISTRY																						1
PHYSICS																				1	1	
SOCIAL STUDIES			1	1								1	1					4		1	9	8
SPEECH																			1		1	
OTHER																				7	7	
HIGH SCHOOL TOTAL																					91	46
ELEMENTARY SCHOOL TOTAL				ONE ROOM 24			LOWER GRADES 109				UPPER GRADES 93										226	31

MAJOR ASSIGNMENT

Number of New Elementary and High School Teachers Who Did Not Teach the Preceding School Year

TABLE XX. Demand for Teachers—New Hampshire

STATE: NEW HAMPSHIRE 1954-55	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	2																				2	2
ART		3																			3	2
COMMERCE			15	1						1								1		1	19	9
ENGLISH				10	12					1				2	1			8		2	36	33
FOREIGN LANGUAGE				2	4																6	8
HOME ECONOMICS						18									1			3			22	6
INDUSTRIAL ARTS							15			2										2	19	7
JOURNALISM																						
LIBRARY SCIENCE									1												1	
MATHEMATICS										8			1	2	1	3	2	3		1	21	16
MUSIC				1							5										6	2
PHYS. ED.—MEN												4		2	3			1			10	1
PHYS. ED.—WOMEN													5							1	6	12
GENERAL SCIENCE										2				2		1					5	7
BIOLOGY														1		4					5	2
CHEMISTRY														1	2						3	
PHYSICS										1											1	
SOCIAL STUDIES			1	2						2			1	1	1			22			30	25
SPEECH																						
OTHER										1	1							1		6	9	
HIGH SCHOOL TOTAL																					204	130
ELEMENTARY SCHOOL TOTAL	ONE ROOM 5			LOWER GRADES 176			UPPER GRADES 140														321	86

The New Hampshire report covers the 1954-55, rather than the current school year.

TABLE XXI. Demand for Teachers—New Jersey

STATE: NEW JERSEY 1955-56	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	4																				4	1
ART		74																			74	13
COMMERCE			85																		85	85
ENGLISH				182																	182	109
FOREIGN LANGUAGE					51																51	49
HOME ECONOMICS						86															86	21
INDUSTRIAL ARTS							50														50	10
JOURNALISM																						
LIBRARY SCIENCE									21												21	9
MATHEMATICS										107											107	42
MUSIC											102										102	21
PHYS. ED.—MEN												40									40	43
PHYS. ED.—WOMEN													56								56	37
GENERAL SCIENCE														58							58	20
BIOLOGY															17						17	9
CHEMISTRY																15					15	
PHYSICS																	16				16	
SOCIAL STUDIES																		101			101	137
SPEECH																						9
OTHER																				116	116	35
HIGH SCHOOL TOTAL																					1181	632
ELEMENTARY SCHOOL TOTAL	ONE ROOM 1			LOWER GRADES 2020			UPPER GRADES 464							OTHER 108							2593	561

In New Jersey it was not possible to identify the minor teaching assignments of new high school teachers, and thus the figures shown in this table are not included in composite table.

TABLE XXII. Demand for Teachers—New Mexico

STATE: NEW MEXICO 1955-56	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	9			1							1					1					9	16
ART	1	6									2										9	11
COMMERCE		1	18	1			1				1	1	1						1	1	26	30
ENGLISH	1	0	2	39	3	3		1		1			2					7	1		60	26
FOREIGN LANGUAGE				4	7													2	2		15	12
HOME ECONOMICS	2			2	1	13							2	1	1			1			23	25
INDUSTRIAL ARTS							15			1								1			17	18
JOURNALISM				2				3	1										1		7	5
LIBRARY SCIENCE									5												5	
MATHEMATICS			1							27		2		4	1	1		1			37	7
MUSIC				5							24		2					1			32	19
PHYS. ED.—MEN	1				1					1		5		1				4			13	45
PHYS. ED.—WOMEN				1			1			1		1	15					1		1	21	15
GENERAL SCIENCE				1						1				8	1						11	6
BIOLOGY					1					1					13						15	12
CHEMISTRY															1	1					2	1
PHYSICS																						
SOCIAL STUDIES	1			7				1		1			3			1	21				35	32
SPEECH				1							1								2		4	2
OTHER					1								2			1				16	20	5
HIGH SCHOOL TOTAL																					361	287
ELEMENTARY SCHOOL TOTAL	ONE ROOM 36			LOWER GRADES 359			UPPER GRADES 352							OTHER 18							765	185

Number of New Elementary and High School Teachers Who Did Not Teach the Preceding School Year

TABLE XXIII. Demand for Teachers—North Carolina (White)

STATE: NORTH CAROLINA 1955-56 — MAJOR ASSIGNMENT \ MINOR ASSIGNMENT	AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	26													4							30	45
ART		9																1			10	18
COMMERCE			102	6	1					1	1	1		1				7			120	163
ENGLISH		1	3	85	24				3	4	1		3	3				40			167	192
FOREIGN LANGUAGE				12	6									2				2			22	28
HOME ECONOMICS						68								10							78	110
INDUSTRIAL ARTS							8					1						1			10	24
JOURNALISM																						
LIBRARY SCIENCE				3					19	1								1			24	12
MATHEMATICS				6						43		10	3	18	1			10			91	107
MUSIC											29							2			31	70
PHYS. ED.—MEN												14		8	2			20			44	51
PHYS. ED.—WOMEN													14		4			10			28	131
GENERAL SCIENCE	1			3		10				10				60				12			96	54
BIOLOGY				1						2		2	6		8	2	1	1			23	41
CHEMISTRY					1												1				2	4
PHYSICS															1		1	1			3	
SOCIAL STUDIES				7	6					6		2	1	5				60			87	136
SPEECH																						
OTHER																				36	36	27
HIGH SCHOOL TOTAL																					902	1213
ELEMENTARY SCHOOL TOTAL	ONE ROOM 4					LOWER GRADES 651						UPPER GRADES 1039			OTHER 3						1697	702

TABLE XXIV. Demand for Teachers—North Carolina (Negro)

STATE: NORTH CAROLINA 1955-56 — MAJOR ASSIGNMENT \ MINOR ASSIGNMENT	AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	3																				3	21
ART		1																			1	4
COMMERCE			22	2														3			27	54
ENGLISH			1	22	8																31	50
FOREIGN LANGUAGE				4	1				2		1	1	1	1				10			21	18
HOME ECONOMICS						19								2							21	56
INDUSTRIAL ARTS							7														7	26
JOURNALISM																						
LIBRARY SCIENCE					2				8									1			11	2
MATHEMATICS										11		2		10				4			27	34
MUSIC											10							3			13	33
PHYS. ED.—MEN												10		2				1			13	29
PHYS. ED.—WOMEN													4								4	30
GENERAL SCIENCE										5				24				1			30	18
BIOLOGY												1			2		1				4	30
CHEMISTRY											1										1	10
PHYSICS																						
SOCIAL STUDIES				5						1								9			15	96
SPEECH																						10
OTHER																						
HIGH SCHOOL TOTAL																					229	577
ELEMENTARY SCHOOL TOTAL	ONE ROOM 3					LOWER GRADES 174						UPPER GRADES 278									455	543

TABLE XXV. Demand for Teachers—Ohio

STATE: OHIO 1955-56 — MAJOR ASSIGNMENT \ MINOR ASSIGNMENT	AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	14			1			5								20	1					41	3
ART		67	1				1			3											72	90
COMMERCE			193	11								1						17			222	147
ENGLISH				287	53			11											15		366	214
FOREIGN LANGUAGE				13	84													3			100	120
HOME ECONOMICS			1			112							9		5						127	126
INDUSTRIAL ARTS		5					111			7		16		2		1	2			7	151	87
JOURNALISM				3				1													4	3
LIBRARY SCIENCE				3					9											5	17	1
MATHEMATICS							6			97				2	3	4	1				113	65
MUSIC		1	1								193							7			202	215
PHYS. ED.—MEN			1									180			17					3	201	215
PHYS. ED.—WOMEN				3									67		2			6			78	134
GENERAL SCIENCE												4		101		7	12				124	70
BIOLOGY	4					2						3	5		61						75	103
CHEMISTRY	1		1											4	21	19					46	42
PHYSICS														14		7	51				72	18
SOCIAL STUDIES			1	4	2					4		1			2			212			226	286
SPEECH				4				2	3										47		56	115
OTHER																				392	392	60
HIGH SCHOOL TOTAL																					2685	2114
ELEMENTARY SCHOOL TOTAL	ONE ROOM					LOWER GRADES						UPPER GRADES									3501	1173

Number of New Elementary and High School Teachers Who Did Not Teach the Preceding School Year

TABLE XXVI. Demand for Teachers—Oklahoma

STATE: OKLAHOMA 1954-55 / MAJOR ASSIGNMENT	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	13						1														14	70
ART			5															1		1	7	25
COMMERCE			73	1		1				4	3			1				2		4	89	193
ENGLISH			6	79	4	5		2		3	4	2	1	1	1			3	11	4	126	100
FOREIGN LANGUAGE				1	4													1		1	7	16
HOME ECONOMICS				4		63			1					1	2			1		1	73	164
INDUSTRIAL ARTS							40											3		4	47	135
JOURNALISM																						1
LIBRARY SCIENCE									3					1							4	3
MATHEMATICS							3			43	1	1	1	11				2		5	67	72
MUSIC										2	68				2					3	75	119
PHYS. ED.—MEN					1					1		17	3					2		2	26	101
PHYS. ED.—WOMEN													11		1						12	12
GENERAL SCIENCE										1		2	2	17	4	2		1		5	34	39
BIOLOGY										1			1	4	5	6		1		1	19	32
CHEMISTRY										1					1		1				3	5
PHYSICS																						1
SOCIAL STUDIES				3		1	2				1	6	1	2				26	11	18	71	210
SPEECH				1														11	6	1	19	33
OTHER																				22	22	9
HIGH SCHOOL TOTAL																					715	1340
ELEMENTARY SCHOOL TOTAL				ONE ROOM 40					LOWER GRADES 175			UPPER GRADES 287									502	663

The Oklahoma report covers the 1954-55, rather than the current school year.

TABLE XXVII. Demand for Teachers—Oregon

STATE: OREGON 1955-56 / MAJOR ASSIGNMENT	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE							1							2	1			2		2	11	12
ART		5		2		1							1					2			11	27
COMMERCE		1	32	2	1			2	1	2	2	1	1					6			51	25
ENGLISH			5	43	6			17	1	2	1		5	1				12	9		102	50
FOREIGN LANGUAGE			1	3	1																5	13
HOME ECONOMICS				1	5	26				2			6	1				1			42	33
INDUSTRIAL ARTS				1			9			3				1		1		4			19	14
JOURNALISM				1																	1	2
LIBRARY SCIENCE				1					7											1	9	2
MATHEMATICS				1	1					12				5		1		3		1	24	17
MUSIC		1		2						2	14	2	1								22	45
PHYS. ED.—MEN			1							4		12		2	2			6			27	49
PHYS. ED.—WOMEN		1		3									20	1	1			3			29	26
GENERAL SCIENCE										9		4		3	5			3			24	38
BIOLOGY				1						3		1		2	2	1		2			12	9
CHEMISTRY														1		2					3	6
PHYSICS																	2				2	1
SOCIAL STUDIES			1	3		1		1		1		6						24		1	38	63
SPEECH				5															1		6	20
OTHER						1				1									1	2	5	12
HIGH SCHOOL TOTAL																					443	464
ELEMENTARY SCHOOL TOTAL				ONE ROOM 18					LOWER GRADES 722			UPPER GRADES 402									1142	496

TABLE XXVIII. Demand for Teachers—Puerto Rico

STATE: PUERTO RICO 1955-56 / MAJOR ASSIGNMENT	MINOR ASSIGNMENT: AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	22																				22	
ART		2																			2	
COMMERCE			55																		55	8
ENGLISH				95	9					2					1			1			108	19
FOREIGN LANGUAGE				11	14													27			52	26
HOME ECONOMICS	41																				41	8
INDUSTRIAL ARTS							50														50	12
JOURNALISM																						
LIBRARY SCIENCE									6												6	
MATHEMATICS										22				17				1			40	
MUSIC											2										2	1
PHYS. ED.—MEN												12									12	9
PHYS. ED.—WOMEN													2								2	1
GENERAL SCIENCE				1						30				17							48	6
BIOLOGY															6	6		8			20	1
CHEMISTRY					1										6	8		5			20	
PHYSICS										7											7	
SOCIAL STUDIES				7	21					1				1				20			50	49
SPEECH																						
OTHER					2									2				9			13	
HIGH SCHOOL TOTAL																					550	160
ELEMENTARY SCHOOL TOTAL				ONE ROOM					LOWER GRADES			UPPER GRADES									1717	333

Number of New Elementary and High School Teachers Who Did Not Teach the Preceding School Year

TABLE XXIX. Demand for Teachers—South Carolina (White)

STATE	MINOR ASSIGNMENT																					
SOUTH CAROLINA 1955-56	AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	13																				13	26
ART		7		2																	9	8
COMMERCE			69	6						4				6						2	87	76
ENGLISH				99	13			2			2		2	9				21	4	6	158	82
FOREIGN LANGUAGE				2	7															2	11	8
HOME ECONOMICS						45								9		2		2		2	60	62
INDUSTRIAL ARTS							13														13	11
JOURNALISM																						
LIBRARY SCIENCE									11												11	3
MATHEMATICS				2						60		2		6		4		11			85	26
MUSIC											36										36	56
PHYS. ED.—MEN												17		2				2		2	23	55
PHYS. ED.—WOMEN				2									26	4	2						34	30
GENERAL SCIENCE				6		2				11		2		35	2	6	4	11		2	81	17
BIOLOGY														6	3	2					11	17
CHEMISTRY																7		2			9	2
PHYSICS																						
SOCIAL STUDIES				13	2					6		2						31		4	58	91
SPEECH																			2		2	3
OTHER																		4		22	26	
HIGH SCHOOL TOTAL																					727	573
ELEMENTARY SCHOOL TOTAL				ONE ROOM				LOWER GRADES 435				UPPER GRADES 505									940	245

TABLE XXX. Demand for Teachers—South Carolina (Negro)

STATE	MINOR ASSIGNMENT																					
SOUTH CAROLINA 1955-56	AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	17																				17	27
ART		8																			8	3
COMMERCE			30	6				3										8	3	3	53	23
ENGLISH				47	6				6									8		6	73	30
FOREIGN LANGUAGE				3	11					3						3					20	
HOME ECONOMICS						14								3						3	20	35
INDUSTRIAL ARTS							2					6	3	3	3			3			20	13
JOURNALISM								3													3	
LIBRARY SCIENCE									12									8			20	17
MATHEMATICS							3			38	3				3	3	3				53	10
MUSIC					3						11			3	3			8			28	7
PHYS. ED.—MEN												10		3	6					3	22	29
PHYS. ED.—WOMEN													14	3							17	7
GENERAL SCIENCE												3		11	3						17	2
BIOLOGY										3				6	2	3	3				17	41
CHEMISTRY																11					11	4
PHYSICS																						
SOCIAL STUDIES										6		3		6				19		3	37	43
SPEECH																						
OTHER																		3		3	6	4
HIGH SCHOOL TOTAL																					442	295
ELEMENTARY SCHOOL TOTAL				ONE ROOM				LOWER GRADES 200				UPPER GRADES 174									374	437

TABLE XXXI. Demand for Teachers—South Dakota

STATE	MINOR ASSIGNMENT																					
SOUTH DAKOTA 1955-56	AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	3						2			1				1	1					2	8	13
ART	1																				1	6
COMMERCE		1	11					1		1		1	1		1			8		1	26	50
ENGLISH			4	9				1	3	1	4	1	1					7	4		35	44
FOREIGN LANGUAGE				1																1	2	1
HOME ECONOMICS		1		3		12		1					3	5				1			26	28
INDUSTRIAL ARTS							5			1		5			1			1			13	13
JOURNALISM																					0	1
LIBRARY SCIENCE				1					1												2	
MATHEMATICS										1			1	6		1	1	2			12	18
MUSIC			1	3	1					2	13			1				3			24	36
PHYS. ED.—MEN										1											1	43
PHYS. ED.—WOMEN													3	1							4	16
GENERAL SCIENCE										4	1	6		1		1		1			14	9
BIOLOGY			1									2		1				1			5	7
CHEMISTRY														1	2						3	3
PHYSICS												1									1	0
SOCIAL STUDIES			2	2								16	1	2	1			8		3	35	46
SPEECH																					0	9
OTHER																				10	10	40
HIGH SCHOOL TOTAL																					222	383
ELEMENTARY SCHOOL TOTAL				ONE ROOM		354		LOWER GRADES 130				UPPER GRADES 92									576	101

Number of New Elementary and High School Teachers Who Did Not Teach the Preceding School Year

TABLE XXXII. Demand for Teachers—Tennessee

STATE: TENNESSEE 1955-56 — MAJOR ASSIGNMENT \ MINOR ASSIGNMENT	AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	6													4	1						11	40
ART		4																			4	17
COMMERCE			35	3						1			1	2	1			2			45	154
ENGLISH			1	39	6				1	3	1	1	1	3	1			8	2		67	200
FOREIGN LANGUAGE					1																1	34
HOME ECONOMICS						18							2	3	2	1		2			28	148
INDUSTRIAL ARTS							11			1				1	1						14	63
JOURNALISM																						
LIBRARY SCIENCE				2					4	1								1			8	4
MATHEMATICS				4						13		1		3	3	1	2	5			32	51
MUSIC		1								1	26							2			30	105
PHYS. ED.—MEN				2						3		22		4	6			12			49	146
PHYS. ED.—WOMEN			1	1		1							16		1			1	1		22	87
GENERAL SCIENCE							1			3		1		5	3	3		3			19	54
BIOLOGY			1	1		1				3		2		2	3	2					15	65
CHEMISTRY						1								2	1	1					5	22
PHYSICS																						2
SOCIAL STUDIES			3	4	1	1	1		1			2	1	2	1			21	1		39	324
SPEECH		1		1																	2	16
OTHER																				3	3	43
HIGH SCHOOL TOTAL																					394	1575
ELEMENTARY SCHOOL TOTAL — ONE ROOM — LOWER GRADES — UPPER GRADES																					1074	708

The Tennessee report includes inexperienced teachers only.

TABLE XXXIII. Demand for Teachers—Texas

STATE: TEXAS 1955-56 — MAJOR ASSIGNMENT \ MINOR ASSIGNMENT	AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	66																				66	253
ART		40																			40	81
COMMERCE			176																		176	357
ENGLISH				462																	462	427
FOREIGN LANGUAGE					66																66	79
HOME ECONOMICS						174															174	302
INDUSTRIAL ARTS							91														91	139
JOURNALISM																						45
LIBRARY SCIENCE									31												31	44
MATHEMATICS										221											221	152
MUSIC											148										148	364
PHYS. ED.—MEN												201									201	199
PHYS. ED.—WOMEN																						173
GENERAL SCIENCE																						99
BIOLOGY														214							214	116
CHEMISTRY																						64
PHYSICS																						22
SOCIAL STUDIES																		225			225	501
SPEECH																			70		70	122
OTHER																				141	141	109
HIGH SCHOOL TOTAL																					2926	3852
ELEMENTARY SCHOOL TOTAL — ONE ROOM — LOWER GRADES 2301 — UPPER GRADES 1843																					4144	1808

In Texas it was not possible to identify the minor teaching assignments of new high school teachers, and thus the figures shown in this table are not included in the composite table.

TABLE XXXIV. Demand for Teachers—Utah

STATE: UTAH 1955-56 — MAJOR ASSIGNMENT \ MINOR ASSIGNMENT	AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	2													1	1						4	15
ART		8	1							1											10	12
COMMERCE			19	3				1	1	1			1	1				2			29	42
ENGLISH			1	41	4			3	1	3	1		2					17	7	1	81	28
FOREIGN LANGUAGE				1														1			2	7
HOME ECONOMICS			1	2	1	23		1		2			6	1				2			39	46
INDUSTRIAL ARTS							10			3				2				1			16	23
JOURNALISM																					0	0
LIBRARY SCIENCE				3					5	1											9	5
MATHEMATICS			1	1			1			9		2		7			1	3	1		26	9
MUSIC		1	1	4		1				1	8							4			20	23
PHYS. ED.—MEN				1						1		11						3		1	17	43
PHYS. ED.—WOMEN			2	6	1	2				1			14					3	1		30	39
GENERAL SCIENCE	1						1			6				6		1		2		1	18	20
BIOLOGY				1						1		2		1	7	1					13	11
CHEMISTRY																	1				1	5
PHYSICS										1				1							2	5
SOCIAL STUDIES				4		1				3		1		1				23			33	90
SPEECH				1														2			3	16
OTHER				2						2	1							2	1	7	15	19
HIGH SCHOOL TOTAL																					370	454
ELEMENTARY SCHOOL TOTAL — ONE ROOM 9 — LOWER GRADES 302 — UPPER GRADES 168 — OTHER 12																					491	460

Number of New Elementary and High School Teachers Who Did Not Teach the Preceding School Year

TABLE XXXV. Demand for Teachers—Vermont

STATE	MINOR ASSIGNMENT																					
VERMONT 1955-56	AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	4															1					5	5
ART																						
COMMERCE			18	2								1						2			23	8
ENGLISH			1	7	9													10		1	28	16
FOREIGN LANGUAGE				1	2																3	8
HOME ECONOMICS						10										1					11	11
INDUSTRIAL ARTS							3											1		1	5	
JOURNALISM																						
LIBRARY SCIENCE																						
MATHEMATICS				1						7			1	7				2			18	8
MUSIC											3										3	2
PHYS. ED.—MEN																		2			2	2
PHYS. ED.—WOMEN													1								1	
GENERAL SCIENCE										9				4				2		1	16	6
BIOLOGY																				1	1	
CHEMISTRY														1							1	1
PHYSICS							1														1	
SOCIAL STUDIES			2	3								2		2				7		1	17	19
SPEECH																						2
OTHER										1										1	2	11
HIGH SCHOOL TOTAL																					137	99
ELEMENTARY SCHOOL TOTAL				ONE ROOM 52				LOWER GRADES 97				UPPER GRADES 76									225	126

MAJOR ASSIGNMENT

TABLE XXXVI. Demand for Teachers—Virginia (White)

STATE	MINOR ASSIGNMENT																					
VIRGINIA 1955-56	AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	20																	1			21	15
ART		21	1	5						1		1								1	30	27
COMMERCE			45	3						2								1			51	80
ENGLISH		1		78	11	1		1		3	3	1		4				46	3	3	155	50
FOREIGN LANGUAGE		1		7	17					1								6			32	32
HOME ECONOMICS				1		50					1			4							56	45
INDUSTRIAL ARTS							22														22	4
JOURNALISM								1													1	
LIBRARY SCIENCE				2	1				23									1			27	7
MATHEMATICS				3	1					79		3		17			3	5		1	112	26
MUSIC			1	2							40			1				1			45	42
PHYS. ED.—MEN										1		66		1				8			76	38
PHYS. ED.—WOMEN				1						1			33	1				4			40	52
GENERAL SCIENCE		1		1	1	2				11		6	2	52	1	4		5		1	87	11
BIOLOGY												1		6	5			2			14	17
CHEMISTRY		1								3				2	1	2					9	20
PHYSICS										2							2				4	5
SOCIAL STUDIES		1		11	1				1	3	1	5	3	1		1		68		1	97	106
SPEECH																			1		1	5
OTHER				1								1								42	44	
HIGH SCHOOL TOTAL																					924	582
ELEMENTARY SCHOOL TOTAL				ONE ROOM 27				LOWER GRADES 809				UPPER GRADES 547									1383	340

MAJOR ASSIGNMENT

TABLE XXXVII. Demand for Teachers—Virginia (Negro)

STATE	MINOR ASSIGNMENT																					
VIRGINIA 1955-56	AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	2																			2	4	14
ART		2		2														2			6	10
COMMERCE			13	2										1							16	15
ENGLISH				19	3					1	2							8		1	34	31
FOREIGN LANGUAGE				7	2																9	1
HOME ECONOMICS						10															10	24
INDUSTRIAL ARTS							4					1						1			6	26
JOURNALISM																						
LIBRARY SCIENCE									6	1											7	4
MATHEMATICS										20				9			1	3			33	9
MUSIC				3							17			1				2			23	30
PHYS. ED.—MEN												15		1				1			17	10
PHYS. ED.—WOMEN				1							1		8	1				1			12	9
GENERAL SCIENCE				2						4				16		2					24	24
BIOLOGY												1						2			3	8
CHEMISTRY														1	2	1					4	1
PHYSICS																						
SOCIAL STUDIES				3								1						9		1	14	36
SPEECH																			1		1	7
OTHER																				4	4	
HIGH SCHOOL TOTAL																					227	259
ELEMENTARY SCHOOL TOTAL				ONE ROOM 11				LOWER GRADES 156				UPPER GRADES 103									270	149

MAJOR ASSIGNMENT

Number of New Elementary and High School Teachers Who Did Not Teach the Preceding School Year

TABLE XXXVIII. Demand for Teachers—Washington

STATE	MINOR ASSIGNMENT																						
WASHINGTON 1955-56	AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	11																				16	7
ART		25		1	1				1	2		1		1				4			36	31
COMMERCE		1	41	7	2	1		2	1	1	1	1	1					2		3	64	27
ENGLISH		2	3	84	14	1	2	8	8	4	2	1	7		1			27	3	9	176	65
FOREIGN LANGUAGE				8	19																27	16
HOME ECONOMICS		1	1	6	2	77		1	1	2			9		3					5	108	68
INDUSTRIAL ARTS			1				27			4		2						2			36	35
JOURNALISM																						2
LIBRARY SCIENCE				4		1			16											1	22	1
MATHEMATICS			1	3		1				24		3		7	1	1	2	3		1	47	24
MUSIC				4							60							2	1	1	68	66
PHYS. ED.—MEN										1		15			1			7			24	63
PHYS. ED.—WOMEN				2	2				2				50	1				1		1	59	28
GENERAL SCIENCE									1	15		4		31	2			2		1	56	25
BIOLOGY			1	1			2			2					5	1	1	1		3	17	19
CHEMISTRY										3					1	1				1	6	5
PHYSICS																						1
SOCIAL STUDIES			1	10			1	1	1	3		13			2			45		8	85	130
SPEECH										1									2		3	8
OTHER		2	1	5					1	2	1	2	4			1	1			69	89	35
HIGH SCHOOL TOTAL																					959	656
ELEMENTARY SCHOOL TOTAL	ONE ROOM 25					LOWER GRADES 979				UPPER GRADES 1145											2049	782

TABLE XXXIX. Demand for Teachers—Wisconsin

STATE	MINOR ASSIGNMENT																						
WISCONSIN 1955-56	AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE	19													3	5	2	1				33	58
ART		20	1	6						2	1							2			30	70
COMMERCE		1	61	3					1	1			2					5			75	70
ENGLISH		1	3	99	27	1	1	1	19	2	8		5		1			27	16		209	155
FOREIGN LANGUAGE				7	6																13	32
HOME ECONOMICS		2	1	3		91				1			4	7							109	119
INDUSTRIAL ARTS	1			1			39			1		1		2				3			48	58
JOURNALISM																		1			1	2
LIBRARY SCIENCE				4	1			1	11	1	1							1			20	1
MATHEMATICS		1	1	3	1					35	3	7	1	6	5	8	3	4		1	79	53
MUSIC				8	1					2	61	1		1	2	1		7	1		85	84
PHYS. ED.—MEN				2						2		22	6	7	3	2	3	13	1		61	38
PHYS. ED.—WOMEN				4						1		3	39	3	1		1	8	1		61	52
GENERAL SCIENCE				2					1	13		9	1	11	5	1		2	1		46	30
BIOLOGY						1							2	1	9	4		2			19	49
CHEMISTRY										1				1	3	1	2				8	22
PHYSICS				2											1	1	1	1			6	13
SOCIAL STUDIES			1	20	3	1			3	3		7	3	2	2		2	57			104	187
SPEECH				1															6		7	71
OTHER																						12
HIGH SCHOOL TOTAL																					1014	1174
ELEMENTARY SCHOOL TOTAL	ONE ROOM 565					LOWER GRADES 800				UPPER GRADES 417				OTHER 42							1824	929

TABLE XL. Demand for Teachers—Wyoming

STATE	MINOR ASSIGNMENT																					
WYOMING 1955-56	AGRICULTURE	ART	COMMERCE	ENGLISH	FOREIGN LANGUAGE	HOME ECONOMICS	INDUSTRIAL ARTS	JOURNALISM	LIBRARY SCIENCE	MATHEMATICS	MUSIC	PHYS. ED. MEN	PHYS. ED. WOMEN	GENERAL SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS	SOCIAL STUDIES	SPEECH	OTHER	TOTAL DEMAND	TOTAL SUPPLY
AGRICULTURE														1							9	10
ART		1		1																	2	
COMMERCE			14	1				1		2	1			1							20	2
ENGLISH			3	12	4	1		1	2									3	2	1	29	2
FOREIGN LANGUAGE					1										1						2	
HOME ECONOMICS				1		16				1											18	10
INDUSTRIAL ARTS							2			1											3	3
JOURNALISM																						
LIBRARY SCIENCE									2												2	
MATHEMATICS										5	2	1		5				1			14	
MUSIC											16									1	17	3
PHYS. ED.—MEN			2							1		3		3				1		2	12	12
PHYS. ED.—WOMEN				1									4	1							6	3
GENERAL SCIENCE										5	1	1	2	4				1			14	1
BIOLOGY	1																	1			2	
CHEMISTRY														1							1	
PHYSICS																						
SOCIAL STUDIES					1							2						9		1	13	3
SPEECH																						
OTHER							1											1		7	9	
HIGH SCHOOL TOTAL																					173	49
ELEMENTARY SCHOOL TOTAL	ONE ROOM 62					LOWER GRADES 147				UPPER GRADES 77											286	15

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Motivation for Entering Teaching

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WE MAY regard the decision to enter the teaching profession as *caused* rather than one which simply *happened.* If we can obtain some information about causal factors, it seems reasonable that we could plan and promote more effectively our programs of selective teacher recruitment.

This was the basis of a study recently made by the California Teachers Association, Southern Section.

As grist for the analysis of the problem, opinions were obtained from 1,374 college students in beginning education courses as to their motivation for wanting to teach. Eight of the leading schools of education in Southern California cooperated in this phase of the study. The college students were asked to react to questions such as: (1) To what degree did persons influence you in selecting teaching as a profession? (2) To what degree did specific types of experiences influence you in selecting teaching as a profession? (3) How important were certain factors of the profession (enumerated in the check list) in your decision to enter it?

Findings and Implications

Teachers, as contrasted with other groups of persons, exerted by far the most important influence in the decision of these beginning students to enter the teaching profession. In fact, at the highest level of influence, teachers were mentioned more often than all other groups of persons combined. Not only did this influence level apply to the students' own teachers, but to other teacher friends and acquaintances.

Some questions: Are we capitalizing on teachers' potential influence as well as we should? How can we identify, as well as use more effectively, the much-respected members of our profession in the selective recruitment program? Need we be more concerned as individual teachers about what we say and do because of the positive as well as negative effect our sayings and doings have on our upper grade and high school pupils' career aspirations? Need we be more concerned than we have previously been, as a group, about the negative effect which a relatively small number of teachers may have on boys and girls who have the requisites for becoming good teachers?

The respondents' evaluation of *types of experiences* which influenced their career selection is highly revealing. Positive types of experiences were judged most important. More than four out of five of the respondents now beginning their professional preparation attached high significance to "informal experiences with children" in their decision to become teachers. Nearly two out of three attached high significance to "experiences in occupations similar to teaching" and to "organized experiences with children."

Some questions: Should and can we plan our high school and junior college curricular and co-curricular programs so that selected students would have greater opportunity to obtain these kinds of experiences? Can we capitalize on opportunities for experience with children and youth in social and recreational activities of the community? Would it be desirable and helpful to make these young people observe master teachers in action at the elementary as well as the high school level? What use of students as teachers helpers can be defended?

How important a contribution do various *features or aspects of the teaching profession* have in the career selection? Responses of these beginning students indicate that there is no one or two features of the profession that predominate to the exclusion of others. Rather, there are many things about teaching that appeal, differentially, to be sure. This suggests that our programs of recruitment may become more effective by giving information about, and opportunity to experience, the many satisfactions inherent in teaching.

Of the features of the profession having the highest level of importance for career selection, idealistic elements predominated. More than nine out of ten of the beginning students attached "considerable" or "primary" importance to each of such aspects of teaching as "opportunity to serve," "opportunity to work with young people," and "opportunity for professional growth." At the same time, the more utilitarian and practical aspects of teaching were not unimportant. Salaries, security, vacations, also contributed to these career decisions.

Some questions: Have we said too much to our pupils about low salaries, high turnover, public pressures, and the like and too little about the opportunity to do something truly significant? Can and should we dignify the recruitment program by stressing the opportunity to serve and to do something socially useful? At the same time, through our organized profession, should we not continue to achieve higher salaries, improved working conditions, and improved standards in personnel administration?

One of the assumptions comonly held by leading educators is that many potential teachers among those who have the necessary general qualifications are lost to the profession. The reasons are many. One facet of the California study herein described had to do with reasons why "qualified" persons, known to the respondents, did not embark upon preparation for teaching. The main reasons given in rank order included (1) low salaries, (2) lack of information about teaching, (3) undue amount of public pressures, (4) too many parent and community responsibilities, and (5) high teacher load.

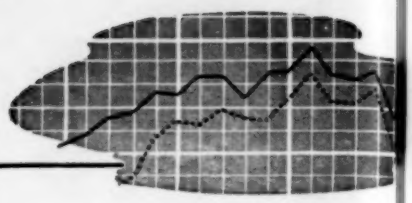
Some questions: How many of the "qualified" persons not now in teaching might have decided differently had they obtained a complete and thought-provoking analysis of what teaching is like and what it offers? To what extent are their opinions concerning low salaries and public pressure, for example, based on misinformation? What must the profession do to improve salaries, alleviate public pressure, reduce class size, in order to attract potentially qualified persons to teaching?

The Challenge

Selective recruitment of teachers is a problem to which the organized profession is now addressing itself. But much of the implementation will need to be done by teachers in service, as individuals. This is one of the most important tasks which confront teachers.

The challenge is clear and inescapable. Each teacher must do his part.

With the Researchers



DOUGLAS E. SCATES

The Prior Meaning of Increases in Teaching Staffs

FIVE years ago, Richey (16)[1] stated that the major educational problem of the fifties would be that of providing buildings and staffs for the children who would begin their schooling. Since that time more than six million have been added to the total of our elementary school enrollment; the anticipated high school increase has arrived; and college enrollments, not waiting for the support of the oncoming wave, have for successive years shown major increases.

Examples of effective ways of preparing to meet expansion problems were reported in the December, 1955, issue of the *Journal* (18). Research, deliberation, and action were presented as essential elements in a strong, forward-looking program. The present treatment continues to relate the knowledge of the scholar and researcher to effective social action. Our general framework will be to consider, first, the facts that research has made available concerning the expansion of our educational system, and second, what these facts mean — in terms of action programs.

The Dimensions of the Problem

In order to develop the scope and significance of the adjustments soon to be required, attention will be directed to some of the estimates that have been made (23). It is possible, with some certainty, to forecast school-age groups for a number of years to come. To estimate actual school enrollments, however, is a more intriguing problem because the per cent of each age group that goes to school or college is constantly changing (13). In the past eighty years this change in per cent has been a more important factor than has the increase in population.

The U. S. Office of Education last fall released projections for a ten-year period ending with 1964-65 (25). In terms of per cent, with 1954-55 as a base, the increase in the elementary schools would be 29; in the secondary schools, 60; and in the colleges, 44. Last January the estimate for colleges was revised upward adding about a quarter-million students to the expected ten-year growth, and raising the per cent of increase from 44 to 52 (26). The elementary school population will increase from about 28 million to 36 million; the secondary school population from 7 million to 12 million; and the college population from about 3 million to 4 million.

Thus, in the aggregate, 14 million more students must be provided with housing and instructors. This means, within the short period of one decade,

[1]Numbers in parentheses indicate items in the bibliography.

the duplication (only in terms of modern standards) of more than one-third (36 per cent) of the entire existing educational system.

The foregoing estimates, especially on the college level, are conservative. In a widely used report, Thompson (22) presented three projections of college growth. Compared with the 52 per cent already mentioned for colleges, his estimates are 24 per cent, 60 per cent, and 72 per cent respectively for low, medium, and high rates of increase. More recently the Fund for the Advancement of Education (5) presented two forecasts for 1964-65, one repeating the U. S. Office of Education figure, the other representing an increase of 75 per cent. While we are pondering such figures, the actual college enrollments may have increased nearer to 100 per cent! The fall enrollment figures of the past three years (prepared by the U. S. Office of Education) have shown a combined increase of nearly 27 per cent; six more years at this average annual rate and the 1952 fall enrollment would be doubled.[2]

On the college level, there are good grounds for not centering attention on 1965, but thinking instead of 1970. These grounds are, first, that the college enrollments of the nation may grow as much in the five years between 1965 and 1970 as in the ten years leading up to 1965; and second, that the children who can bring about this ten-year increase in five calendar years are already born. For every two students now on college campuses, five students may be expected by 1970.[3]

The prediction just stated, or that offered for 1970 by the Fund for the Advancement of Education, does not represent anything exceptional. These estimates represent precisely the rate at which our higher education institutions have been increasing over the past 60 years (19). Decade after decade, the growth has stayed close to its average rate of 60 per cent. This same rate, applied twice in succession to the 1949-50 enrollments, gives a value of 6,840,000 for 1969-70—a number reached by 1971-72 in the forecast of the Fund for the Advancement of Education. While it is not advocated that one rely solely on long-time trends, particularly for short-time forecasting, they can, however, offer a corrective for the tendency to look too attentively to the factors in the immediate situation.

"Why would so many young people go to college? What would the nation do with them?" The same questions were asked about high school attendance a generation ago—and the same answers apply (17). Large increases in college trained personnel would help meet the pressing demands for professional workers in a variety of fields (teaching, as well as engineering) which have been seriously undermanned for some years (29). For a period extending over half a century, the per cent of college-age youth who were enrolled in college has been virtually identical with the per cent of the high-school-age group who were enrolled in high school 30 years earlier (19). This parallelism in growth would indicate a similar demand in the employment market and a similar response on the part of young people in the two levels, high school

[2]The geometric mean of the three increases is 8.2 per cent; this rate applied annually doubles the base in 8.8 years.

[3]Thompson's (22) high rate of increase shows 81 per cent as much growth between 1965 and 1970 as between 1955 and 1965. By one more year it becomes 94 per cent as much (p. 26). The Fund for the Advancement of Education (5), in Projection B, indicates a gain of 1,941,000 between 1955 and 1965, and a slightly larger gain in the following five years (p. 50).

and college, at two different stages in our country's recent development.

For example, a number of basic studies have been made on the present and the expanded needs of education in a group of some 11 to 16 states called the South (4, 15, 20). This region comprises between one-third and one-fourth of the nation in number of states, in area, and in population.

In this region the state of Florida is in many ways unique. On the college level, the 1,970 enrollments in Florida have been administratively accepted as three times those of 1950 (3).

All of these increases will be intensified if certain groups of schools and colleges find that they are unable to care for the same proportion of a greatly increased national total as they are now doing. For example, private schools now enroll about one-eighth of the elementary and secondary school pupils and about one-half of those in higher education (13). Time will be required for private schools to increase their capital and sources of income. Some of them already maintain a policy of non-expansion; a marked increase in size would entail sacrificing their basic traditions of personal attention to students—their reason for existence (17, 21, 29). Growth requires changes in point of view as well as in facilities (2).

Thus far the expansion of educational demand has been sketched only for the conventional grades. Reference should be made to a further development which is of unknown potentialities. "Almost two-thirds of the population is 21 years of age or older. . . . Most adults did not receive, as children and youth, the fundamental education that they now believe they should have received" (7). The 1950 census brought out that nearly half the population aged 25 and over stopped their education in the elementary grades. Only a third finished high school. A few ventured to try a little of college (24). "Adults are living in a rapidly changing world. They are living longer. Education received in childhood and youth no longer suffices. Probably it never did" (7). There are no unfulfilled lives to waste if appropriate education might make them constructive.

The Personnel Side: How Many Professors and School Teachers?

We have been thinking of getting our higher education plant ready in time to get enough students educated to yield enough school teachers to meet the classes that are already assembling and that will form a 50 per cent rise over 1950 within three or four years.

There is also, of course, a personnel side to education. We will need expanded college faculties. How many new faculty members—and how soon? If, by 1970, we expect two and one-half times as many college students as we have now, perhaps the instructional staff should expand in like proportion. It has in the past.[4]

The number of new instructors that must be employed each year in order to bring about a given change in the total staff is astounding. To expand a given faculty by 150 per cent in a period of fifteen years requires employing each year not two and one-half times as many new persons as we have, on the average, employed in the past, but

[4]During 1940-1950, enrollments grew a third faster than the faculties. But that was thought of as a temporary emergency. Over a fifty-year period, 1890-1940, both groups grew at the same rate: students, 1.57 times per decade; faculties, 1.56 times. Enrollments doubled every fifteen years, as did faculties.

rather four times as many.[5] And that means beginning this fall and keeping it up every year!

We cannot employ four times as many new persons this fall as we usually do; they are not available. However, the new students will not all come to our colleges next fall in full volume. So we can begin expanding our staffs gradually. Yes—but recognizing that in the past three falls we have already experienced a growth of 27 per cent. And that is a purely psychological or sociological increase; the number of college age youth today is *less* than it was 25 years ago.

What schemes are there for this gradual business? Well, as a nation, assume we have been making about 8,000 replacements a year—to maintain staff. We can think in terms of a "straight line" plan to increase—increase the increases by a constant amount each year. Sounds workable. On paper, then, the annual increase in increases would be 3,470, so that the nation employs 8,000 *new* staff members the first year, 11,470 new persons the second, and so on—a jump of 42 per cent in one year.

Yes, surely, we can begin very gradually and follow an organic growth curve—a curve that increases each year by a constant per cent of the preceding year. To fit our conditions, the increase would be about 18 per cent a year. The first year would be 8,000; the next 9,440; the third 11,140; and so on. Sounds good—but to attain our objective we have to pay heavily toward the end. The fifteenth year would call for 81,000 new persons to be employed.

We should like our teachers of teachers to be well educated, well experienced, mature persons. It makes a difference to the future teachers who study with them. We may have to accept some compromises; but we should not give up without some well directed, practical efforts at interesting selected students in college teaching.

Maybe we had better give a thought to the public school teachers—to the statistical aspects. Our primary goal is to supply the needs of elementary and high schools. How many new teachers will be called for?

Fortunately, the demand for school teachers (although already with us) will not increase as rapidly as the need for new college faculty members. Let us assume a replacement rate of 10 per cent, although it may be slightly high for the nation. To increase the teaching staff of some institution or area by 100 teachers over the course of 15 years, we will have to employ 15 new teachers every year; that is, 15 in addition to those we regularly employ to maintain our regular staff at normal strength.

If we care to think in terms of ratios, to double the teaching staff of a school system or state in 15 years we must employ each year two and one-half times as many new teachers as we normally employ, on the average, to maintain our present staff. That is, in a small area if we had 100 teachers, we would (in the long run) employ 10 new ones each year. To bring our staff of 100 up to 200 within 15 years, we would have to employ 25 new persons each year.

Of course, we can use other plans. Growth is more natural when it proceeds in something like a geometric

[5]These results assume a replacement rate for college faculties, on the average, of 4 per cent. The figures which follow assume a base of 200,000 college instructors. Detailed estimates are presented in the Fund for the Advancement of Education publication (5), p. 55, using Projection B. The figures in that publication are conservative in that they do not represent the total professional staff but only the instructional portion. Figures given by Wolfle (29), p. 124, are larger for 1960 and 1965, but represent total faculties. Wolfle apparently employs a replacement rate of less than 4 per cent.

progression. On that basis, for every 100 teachers we might want to expand, we must increase the number of new teachers employed each year by about 5 per cent. To double in 15 years, we could begin by employing one and one-half times as many new teachers as we have been doing and gradually work up to the fifteenth year when we would employ three times the present number of new ones.

These models, while being artificial, do give us certain understandings. If these illustrations serve to keep us from thinking that when we want 100 additional teachers we only have to hire 100 more, they will have justified themselves.

What Shall We Do?

The needs on every hand are so far beyond our accustomed thinking that they are bewildering, and the pattern is so inter-related that we wonder what is possible, and what we should give prior attention to.

Counsel from many different perspectives has been advanced. Last year, Harlow, in two closely argued articles (8, 9), pointed out that our need for school teachers and college professors is but part of a general problem of short supply of trained manpower in various fields of activity. This limited "pool of highly trained persons is under severe pressure from continuing military needs, from an expanding school enrollment, and from an industrial establishment exhibiting prodigious growth." Further, educational salaries are not as flexible as those of the other competing fields. In addition to any heroic efforts we may make in school finance and teacher recruitment, we need to examine many of our teaching practices.

The writer ventures a reaction. The roles outlined for the fully qualified teacher were disturbing. The master teacher is (apparently) to be removed from the children; his time is too precious for them to have. It is his function to (a) design the educational program, (b) diagnose pupil difficultly and prescribe the remedy, and (c) evaluate the educational program. So the teacher becomes an administrator—of his assistants and pupils, telling them (maybe over an intercom from his office) that a certain test record indicates such and such, and that Johnny should be given remedial exercises Nos. 137 and 224. This conception does not go beyond what some "expert" educationists recommend.

Teaching is a *personal* matter, and so is learning. They are but two sides of the same dynamic situation in which a stimulating teacher makes *wanting to learn* almost irresistible and makes enthusiasm for living contagious. We will neither contribute to the growth of personalities nor add to the zest of democratic participation by writing out lesson plans for assistants to execute. If there cannot be enough well qualified teachers, let us look at the situation with as open minds as possible; but let us not take the best teachers away from the children. There is no other spot in the world where they can be equally as important.

The Fund for the Advancement of Education has been concerned for some time with the increasing problems growing out of shortages of personnel, buildings, and money. Last fall the Fund issued a bulletin analyzing in considerable detail, and presenting with unusual clarity, the essential aspects of the educational era we face (5). The conclusion was reached, and buttressed, that staffing the schools in the decade ahead would require half of the college graduating classes, whereas only about 20 per cent of the college

graduates actually become teachers. Neither will college instructors—teachers of teachers—become available in sufficient numbers. The gaps are serious.

The bulletin outlines various things which can be done in the light of studies that have been made (14). The better use of teacher time, through the help of aides, is emphasized.

New Jersey attacked the problem from a state-wide basis. The state of New Jersey made a systematic study of the sources of its new teachers and the replacement needs over a five-year period, then prepared a unified plan for expanding their six state teachers colleges (27, 28).

The NCTEPS, NEA, devoted its 1955 annual report to this subject (12). The report considers the years 1955-56 to 1964-65. Basic data bearing on expanded educational needs are presented and analyzed. Far from concluding that the situation is hopeless, the report finds favorable signs in a number of trends. Teaching as a field is holding its own with college graduates. In the last two years, especially, it has moved ahead. With increasing enrollments and ratios based on past experience, the conclusion is reached that enough new school teachers can be available to cover replacement and expansion.

Gibson (6) assumes a present annual need for new teachers of 100,000 for replacement and 53,000 for expansion. He states that we are currently preparing only about a third of this number who actually enter teaching. He outlines five areas in which effort could be exerted to help the situation.

Herge (10) lists a number of things which members of teacher education institutions or departments can do to help. Anderson (1) lists various adaptations in college offerings which are available to help teachers obtain further education.

Maul has made many suggestions as to sources of supply and ways of alleviating the teacher shortage. In addition to his report in this issue of the *Journal,* he has, in a recent article (11), analyzed factors in the national scene which bear upon the educational situation. He calls attention to eight lines of effort which would help to improve this situation. "There are many encouraging signs on the horizon. We can overcome the teacher shortage when, but not until, we make teaching truly competitive in terms of remuneration, working conditions, and overall satisfactions to be derived by those who choose to enter and remain in classroom service."

Efforts along the lines suggested by Maul, Gibson, and others are worthy of serious consideration. It would seem that higher education has the crucial role for the next 10 of 15 years. All levels of education require improvements and extensions in housing, certainly. But when the school buildings are erected and the children have come in, whether there is a qualified teacher for them depends in large part on the success during the next few years of the college program. If the college enrollments grow, as it now seems they will, and if the colleges can provide housing and instructors in sufficient quantity and hopeful quality, the entire educational system will gradually work out adjustments. The extremely rapid rate at which we must grow will be distracting; but so long as the entire educational system grows somewhat in proportion, there will be great gain.

The writer's conviction is that the American people want good education. We must do everything we can to make it available to them.

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Browsing Through the Bookshelves

ROBERT L. McCAUL, JR.

School and Society

Margaret Fisher, *Leadership and Intelligence*. Bureau of Publications, Teachers College, Columbia University. (New York: 1954) 162 p.

In a field which all too often emphasizes the practical and, in the main, the rhetorical (rather than intellectual) justification of practice, this work is both cheerful and hopeful.

This is not to say that Dr. Fisher is not concerned with practical problems; on the contrary, she proposes to grapple with what is perhaps one of the most practical and certainly most difficult problems in the Western tradition—the problem of freedom in society.

The problem of freedom is posed in terms of an opposition of two broad theories: that of Karl Mannheim on the one hand, and the American tradition of James, Pierce, and Dewey on the other. What is perhaps of major significance in the author's analysis is her perception that first, the conclusions enjoined, whatever they may be, have profound consequences for educational practice and educational administration as well as for political theory and practice. Second, that the problems of freedom, leadership, and the good society require an investigation directed toward certain extremely fundamental questions—in this case, the nature of rationality and the irrational, and the process of inquiry.

The book begins with a description of Mannheim's conception of a "free floating" intellectual class and the peculiar way in which such an intellectual elite can function in providing leadership. As a consequence of an apparently careful, yet extremely cryptic and difficult analysis of the concept of intelligence entertained by Mannheim, Dr. Fisher concludes that the dichotomization of elite and mass, the penchant for the transcendental in judgments of value, the disinterestedness of the elite, and the apparent absence of techniques by which mass and elite apply controls to each other, make Mannheim's position more or less impractical and untenable. To this view she opposes the Method of Practical Intelligence of the pragmatic school (and particularly of Professor Raup of Teachers College, Columbia University). In this view intelligence is not a rare commodity, restricted to the elite; it has become democratically distributed! The method of practical intelligence, says Dr. Fisher (p. 83):

. . . "recognizes the necessity for guidance but finds its ultimate source not in high level abstraction but in the involvement of men in communities of judgers. It regards the final outcome of judgment as determined, not by generalizations, facts, or heroes, but by the decision of the community: . . . the interplay of individuals in mutual guidance and common decision is the ineluctable element in history, the irreducible minimum requirement of adequacy in judgments of practice."

In her denial of intelligence as "substantive," she tends to fall into the opposite error, involving a total denial of intelligence, however defined. The method of pratical intelligence, like the method of reason, "recognizes the necessity for guidance," but Dr. Fisher has not told us in sufficient detail how intellectual guidance may appear on the scene. If the answer is

merely in terms of converting the intellectual from his function as an elite to a function as a meber of a community of judgers, then I would say that the answer is insufficient, on two grounds.

First, in terms of the political relationships involved, I am not sure that the fundamental problem of the elite-mass dichotomy has not merely been moved to another context, or alternatively, simply destroyed by the denial of the intellectual as having any special character.

Second, and most important for the entire book, the genuinely fundamental problem of the *function of ideas in inquiry* has not been faced up to, and in fact, seems to be denied, if as Dr. Fisher says, practical intelligence does not find its source in high level abstraction.

If the final outcome of judgment is determined not by generalizations, facts, or heroes, but by the decision of the community, we encounter some strange paradoxes of our own. First, Dr. Fisher seems much more optimistic about the possibility of *community* than was Dewey in *The Public and Its Problems.* Second, she seems to be unaware of Dewey's own concern for the community as a community of inquiry, hence his profound concern for a theory of inquiry and the indispensable necessity for a concern for generalizations and facts. Finally, with respect to heroes, I am much stricken by the similarities which I see as existing between Dr. Fisher's view of leadership and Professor Herbert Simon's view of the nature of public administration.

In the latter view, however, the leader, who may or may not be very bright, must certainly be a hero, and I believe that Dr. Fisher's own position has as great a need for heroes as Karl Mannheim's theory, if in fact Mannheim required them at all.

Dr. Fisher does not realize, I think, that Mannheim's qualifications of the elite as "disinterested" and "detached" is comparable to Plato's dialectical conversion of Thrasymachus' "ignorant" selfishness to that kind of enlightened self-interest, and consequently requires the identification of a community of interest by *intellectual perception.* Alternatively, a community of judgers devoid of intelligence—and whether intelligence is defined in Platonic or in Deweyan terms does not matter here—can be at best improvident.

I agree with Dr. Fisher in her perception of the terrifying quality of any political theory which proposes an oligarchy—even an oligarchy of intellect. Merely to be frightened of oligarchy does not demonstrate that oligarchy does not exist, however. I agree that the problems of democracy and of democratic leadership require an analysis and clarification of the nature of intelligence, but I feel that the terms with which the problem has been established are not sufficiently fundamental for productive inquiry.

In her characterization of the Method of Practical Intelligence, Dr. Fisher owes, by her own admission, much to Dr. R. Bruce Raup. I do not wish to become involved in the question of the adequacy of Dr. Raup's theory of practical reason as a representation of the "American pragmatic tradition of James, Pierce, and Dewey," but I must voice certain misgivings, at least with respect to Dr. Fisher's interpretation of Raup.

Dr. Fisher is extremely anxious that we view the problem here in terms of conflicting conceptions of the nature of knowledge; with this I am in agreement, up to a point at least. However, the conflict is stated in terms of (a) knowledge as fixed, immutable, unchanging, and (b) knowledge as instrumental in inquiry and continually revised by inquiry. Now, while it is perfectly true that Dewey makes such a distinction frequently in *Logic: A Theory of Inquiry,* and elsewhere, and while it is further true that the distinction in Dewey's hands is useful for his particular dialectical operations, I do not think that it is sufficient for the problem here. To characterize Mannheim as a dialectician and at the same time holding for a conception of "fixed" knowledge involves a contradiction which completely misses the essential nature of the dialectical method. What is "fixed" in Plato, the master dialectician, are principles of an overwhelmingly abstract nature—the *one,* the *many,* the *idea of the good;* their counterparts can be found in Dewey: *experience, continuity,*

and *interaction*. The philosophies are by no means identical; to my mind, they are both dialectical, although not in the same way, and as any philosophy must, they both require certain "fixed" principles.

I must apologize for this rather cryptic and certainly over-technical discussion. Its justification consists in the fact that Dr. Fisher's conception of the function of symbols in practical inquiry (p. 92) is wholly inadequate as a representation of Dewey's views on the nature of inquiry. She misses completely Dewey's distinction between signs and symbols, signification and meaning, and misses, consequently, the important point of Dewey's discussion of common sense and scientific inquiry. What is missing are the terms by which ideas are instrumental in inquiry, so that Dr. Fisher's dilemma is capable of statement in terms of ideas (whether "fixed" or "fluid") versus no ideas.

Nor do I feel that Mannheim's conception of the sociology of knowledge has been adequately represented. Dr. Fisher has addressed herself to important and profound problems, but in my judgment she has trivialized the important issues. Nevertheless, this work ought to provide a useful function in stimulating educators to fruitful inquiry at a level more profound than is presently conventional.

—*Leonard Gardner*
University of Tulsa

Educational Measurement

Robert M. W. Travers, *Educational Measurement*. (New York: The Macmillan Co., 1955). xix + 420 p. $4.75.

This book is a refreshing departure from the usual text in educational measurement, which typically consists of a chapter or two of historical introduction, several chapters on the principles of test construction, some consideration of relevant elementary statistics, and a multiplicity of chapters cataloguing hundreds of published tests representing every conceivable educational area. Instead, the major emphasis is placed upon the theory underlying the development and use of various types of instruments.

While the author takes no theoretical position of his own, he is careful to indicate the kinds of theories available in each of the areas which he considers, and to demonstrate the differences which result both in the variables measured and in the techniques used to measure them, from such differences in orientation. As the author himself points out, the book resembles the typical text in psychological measurement to a greater degree than it resembles the usual educational text.

The volume is organized into four parts which represent to the author four central problems in educational measurement. The first of these parts is concerned with the general question of the function which measurement plays in education and the concepts upon which it is based. It consists of three chapters which serve to define the major terms of the book, to indicate the relevance of formulating educational objectives and defining them adequately and to introduce pertinent quasi-statistical concepts such as scores, norms, scales, validity, and reliability. In general, the description of objectives leaves something to be desired, since it tends to emphazise behavioral elements to the exclusion of content aspects. As an introduction to the remainder of the book, however, Part I is quite adequate.

Part II is concerned with the measurement of the intellectual outcomes of education. A sharp distinction is made between knowledge and understanding, on the one hand, as against intellectual abilities and skills on the other. Chapters 4 and 5 are concerned primarily with the presentation of evidence which argues against the use of standardized tests of information except in vocational areas, and which suggests that abilities and skills can be measured very adequately by ordinary paper-and-pencil tests. Chapters 6 and 7 discuss the measurement of communication and work skills respectively, while Chapter 8 is concerned with the problem of constructing teacher-made tests and assigning grades. Throughout Part II, the major concern is with the nature of relevant objectives and the types of techniques which can be used in their measurement, rather than upon specific tests *per se*.

Part III, entitled "Measuring Personality Development," reflects the growing concern among educators with problems of evaluating non-intellective objectives. Chapter 9 provides an overview of the area, indicating several theories which have been basic to personality measurement and describing three measurement approaches which have found wide use: ratings, inventories, and free responses to standardized situations. Chapters 10 and 11 review the older materials on the measurement of attitudes and interests, including such specific devices as Thurstone scales, public opinion polls, and the Strong and Kuder Interest tests. Chapter 12 covers recent work in sociometrics.

Part IV, a relatively short section, deals with the prediction of pupil progress. Chapter 13, dealing primarily with intelligence but also concerned with measures of aptitude, treats the Binet and Wechsler intelligence in some detail. Various theories of intelligence are also considered. Chapter 14 is simply a review of the relevant literature dealing with various types of prediction devices and their relative success.

The book itself is not directed at any particular level of education, although its subject matter and mode of presentation seem most appropriate to secondary school measurement problems. The text is written in a clear, straightforward style which makes no exceptional demands upon the reader. A working knowledge of educational psychology and elementary statistics (e.g., the correlation coefficient) is assumed.

The reader who seeks a compendium of tests or a manual for examination writing will not find this is a useful book. Nor should the reader expect to be informed in detail in specific areas such as intelligence testing. However, as an introductory overview of the field which emphasizes basic concepts and provides principles for the judgment of educational measurement programs, the book can be heartily recommended.

—Egon G. Guba
University of Chicago

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What's Happening in Teacher Education?

DELAWARE

University of Delaware News. Some of the most recent developments with regard to the teacher education program at the University of Delaware are as follows:

1. Consideration and development of a "program" for recognition and encouragement of the "academically proficient" student in teacher education.

2. Consideration and work toward a program of general education within the teacher education curricula.

3. Review of all education courses to reduce their number with a view to eliminating unintentional and undesirable duplication.

4. Consideration and work toward a "professional semester" for students who are studying to be secondary school teachers.

—William O. Penrose

FLORIDA

Scholarships. Florida, along with most other states, has been faced with a decreasing teacher supply. As early as 1923, this state initiated a scholarship program designed to encourage outstanding high school graduates to choose teaching as a career. School leaders of today likewise recognize the value of the teaching scholarship as a means of increasing the number of capable young people preparing for the teaching profession.

When the state legislature met in 1953 there were in existence three types of scholarships for the preparation of teachers. The value of these scholarships ranged from $200 per year to $400 per year. During the 1953 session, the state legislature revised the Teaching Scholarship Law and established 1,050 scholarships to be known as "General Scholarships for the Preparation of Teachers," each scholarship to have a value of $400 per year for four years, a total of $1,600.

The state legislature considers the scholarship program so satisfactory that many individual legislators have expressed the desire to increase the amount of each scholarship to $500 per year and to increase the number to 1,500 at the next session.

Among the reasons for the high regard for the scholarship program is the high caliber young people it provides for the teaching profession in Florida. Scholarship awards are made on the basis of the student's score on a competitive examination. This examination is of the objective type and covers high school English, natural science, social studies, and mathematics. In addition, a scholastic aptitude test is given. In order to take the examination each applicant must be recommended by his high school principal and county school superintendent as being "interested in teaching and whose work and qualifications are such as to indicate that he possesses the qualities which should be possessed by a successful teacher."

At a recent state-wide meeting of the Deans of Education of Florida colleges and universities it was reported that approximately 75 per cent of the students who made the "dean's list" in the schools of education are scholarship holders.

Other factors in favor of scholarship assistance are that, upon accepting the award, the individual pledges to register in the school of education of an approved college in Florida, to have his program approved by the dean of education of that college in accordance with the requirements for the graduate certificate as contained in Florida State Board of Education regulations relative to teacher education and certification, and to teach in the public schools of Florida at least the number of years he received scholarship aid.

An extremely strong point in the law is that the State Board of Education can declare in which educational field or fields there exists a shortage of teachers and may award scholarships to only those students pledging to prepare in that field or fields. For example, in the fall of 1954, there were 125 scholarships open and the State Board declared that all scholarships awarded on the basis of that fall examination were to be awarded to individuals who pledged to prepare in elementary education.

Not only did the 1955 legislature evidence no hesitancy in appropriating $840,000 for the biennium for teaching scholarships but appropriated, for the first time, $200,000 for scholarships in nursing education to be administered by the Scholarship Section of the State Department of Education. This legislature also transferred a $60,000 nursing scholarship program designed to prepare students to work in State Tuberculosis Hospitals to the State Department of Education, and named the State Department of Education one of the agencies to handle a $250,000 mental health scholarship program.

—W. C. Golden

LOUISIANA

Follow-up Program in Teacher Education. A committee at Southeastern Louisiana College, Hammond, has visited recent graduates of the college in 12 parish and city school sysems in their immediate area, as part of a follow-up program initiated during the fall semester of the 1955-56 school year.

The laboratory school supervisor and two of the following visited each graduate: principal of the laboratory school; director of teacher training; dean of the division of education.

After scheduling the visit or visits in each district, the parish supervisor was contacted and the purpose of the visit explained. While in the school the Committee talked to the supervisor, the principal, and the teacher, to get information about the following points: (1) the quality of work being done by the graduate; (2) the weaknesses evident in the teacher education program; (3) their suggestions for improving the teacher education program.

A total of 17 visits were made in this first attempt to follow up graduates.

After returning from each visit the committee made a list of the suggestions received and gave it to the Director of Teacher Training for tabulation and organization. The faculty of the laboratory school and other education teachers will study and evaluate these suggestions and make recommendations for improvements.

It was found that the teachers, principals, and supervisors visited were most interested in the program and cooperative in every way.

It was felt that the strongest point of the visitation program was in having the laboratory school supervisor spend the entire day with his former student teacher. He not only observed the work of the student teacher, but also had an opportunty to talk to him.

This type of program requires a great deal of time for the administrators who participate in it, but all who participated felt that their time was well spent. Also, it is felt that evaluation of the procedure will result in improved methods of visitation and in making this a permanent part of the program.

—J. B. Wooley

MICHIGAN

College Field Services. There is in Michigan a Committee of College Field Services, the main purpose of which is to understand better the field service program of each of the state supported colleges and

universities and to encourage cooperative programs among these institutions serving the same area.

As a result, there has developed in Southwestern Michigan a cooperative educational program to render more effective assistance to the smaller secondary schools and teachers in rural areas in the fields of curriculum development and in-service education for teachers. The agencies in this cooperative program are: the Michigan Department of Public Instruction, Michigan State University, the University of Michigan, and Western Michigan College.

This project is not an attempt to dominate, direct, or determine the nature of curriculum change in the public schools. All services are rendered only upon request. The service is set up especially for smaller secondary schools which do not generally have sufficient funds to carry out an effective in-service education program. The service also is available upon request, to the larger school systems and to county superintendents for county institutes.

Some suggested areas of this in-service education project are: general curriculum problems, special subject areas, education of exceptional children, health, recreation, and outdoor education, child growth and development, adult education, guidance and testing, problems relating to administration, library, audio-visual aids, county institute programs, school community relations, problems of school plant and building, organization of staff for continued curriculum study.

This cooperative in-service education program is an experiment. Reactions from the county superintendents and the superintendents and principals in the sixteen counties in Southwestern Michigan served by this program will receive careful consideration.

—G. N. Simmons

MINNESOTA

Committee on Improvement of Instruction. Instruction in Minnesota schools is coming under scrutiny these months with the aim to improve it. Work of the Minnesota State Committee on Study and Improvement of Instruction appointed in 1954 by Dean M. Schweickhard, state commissioner of education, has moved from the planning stage for the preparation of materials and the development of techniques to active participation on a statewide basis.

This grass-roots movement, designed to reach into local areas, has on its planning committee a cross-section representation of school and lay people — city and county superintendents, elementary and secondary principals, supervisors, librarians, curriculum consultants, public and private college faculty, state department of education, teachers associations, school board, P-TA, and citizens committee.

During the summer four workshops and teacher conferences were held in three areas on arithmetic, social studies, and English. The committee has developed evaluative criteria and manuals for use in local school systems in these three areas.

An introductory manual on improvement of instruction has been completed and will be published shortly. Supporting articles in this work will appear in the *Minnesota Journal of Education* each month this year. A list of good books in several areas of instruction has also been published. Pilot centers are being chosen for experimental use of the manuals for other fields of instruction to try out in other pilot centers as soon as they are completed. Workshops and conferences in local systems will feature the use of the manuals.

Regions in the state will hold workshops for teachers, supervisors and administrators. The first chairman of the State Committee was Leo J. Brueckner, Professor of Education, College of Education, University of Minnesota. At his retirement, Clifford P. Archer, Professor of Education in the College of Education, was appointed chairman.

—Clifford P. Archer

NORTH DAKOTA

Scholarships. The State Board of Higher Education has set up annual "waiver of registration fees" scholarships for two per cent of the enrollment in each of North Dakota's nine institutions of higher learn-

ing. This plan was inaugurated for the 1954-55 school year and is to be continued for the 1955-56 year. One hundred and eighty-seven scholarships will be given to North Dakota students based on (1) academic aptitude and promise, (2) financial need, and (3) citizenship and character. The State Teachers College at Valley City, North Dakota, will offer eleven of these scholarships to prospective teachers for the coming year. It is anticipated that the following scholarships will also be available at the State Teachers College to qualified candidates: (1) one Legion Scholarship; (2) two EBC (college men's society) Scholarships; (3) one Elsie Hadly White Scholarship; (4) one Fannie C. Amidon Scholarship; (5) 80 North Dakota Teacher Preparation Scholarships; (6) eleven State of North Dakota Scholarships (waiver of fees).

—R. L. Lokken

PENNSYLVANIA

Advisory Committee on Certification. At the request of the State Council of Education, Dr. Ralph C. Swan, Acting Superintendent of Public Instruction, appointed an advisory committee on certification of teachers. The purpose of this committee is to review all certification in the light of modern trends and to recommend to the council for its consideration possible changes that would improve the existing situation. The committee hopes to be able to present its recommendations by September 1956.

The committee of twenty-two was selected on the basis of interest, educational background, and experience in the area of teacher certification.

The State Commission on Teacher Education and Professional Standards has long been interested in this important problem and from time to time has urged the State Council of Education and the Department of Public Instruction to take this action. Therefore, at a meeting of the Commission in Washington on January 9, 1956, the following resolution was passed:

"Resolved that the Pennsylvania Commission on Teacher Education and Professional Standards provide channels for professional advisement and consultation to the advisory committee recently created by the Department of Public Instruction which is engaged in a complete review of certification standards and regulations in Pennsylvania, and that the commission also stand prepared to offer suggestions to this committee as it proceeds in its work."

Chairman of the advisory committee is Dr. Willis E. Pratt, President of the State Teachers College, at Indiana, Pennsylvania.

—H. E. Gayman

"Good school buildings are an asset—but they are not the essence of good education. The real heart of good education remains, as always, good teaching. We must, if we want to improve the quality of education, attract into teaching and hold there a far larger number of our ablest young people."

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